

THE WORLD BELOW

400 GHz

The Periodical Newsletter of the
WAIKATO VHF GROUP Inc.,
ZL1IS,
Secretary: C/- 14 Acacia Crescent,
Glenview,
Hamilton 3206



**NZART
BRANCH 81**

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SEPTEMBER 2026 ISSUE

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General Meeting September 2026

The next General Meeting of the Waikato VHF Group will be held on

Sunday, 27th September 2026, 1:30pm

at the Silver Fern Farms Event Centre, (aka Te Aroha Events Centre),
44 Stanley Ave, Te Aroha (Ballance Room, our usual venue)

This meeting coincides with the start of Daylight Saving, so don't be late.

**Alan ZL1AMW will present on automation around the home, using radio-based
networking and open source software.**

The "WaiPlenty" 2m repeater on **145.575MHz** will be monitored prior to this meeting for anyone requiring directions.

***Supporting amateur radio on VHF and higher frequencies
across the Waikato & Bay of Plenty since 1963***

Read our history at https://www.zl1is.info/docs/WVHF_Group_History.pdf

Our September general meeting coincides with the start of **Daylight Saving**, so remember to advance your clocks by one hour to avoid arriving late at Te Aroha.

Past Newsletters:

Copies of our newsletters going back to 2005 can be viewed at <https://www.zl1is.info/newsletters.html>

Under the 'Resources' tab on our web site are links to a range of useful web sites. Members are also welcome to submit items for listing on our web site.

Subscriptions:

Our financial year aligns with the calendar year, so **subscriptions fall due on 1st January each year**. Each subscription payment is acknowledged with a receipt emailed to the member – check your inbox, or if not sure, ask our Treasurer. Receipt of this newsletter demonstrates your sub is up to date. Can you encourage someone else to join? The value returned far exceeds the subs we collect.

Subscription rates for 2026 are unchanged from 2025 as follows:

Member or Associate	\$35.00
Family or Club Member ¹	\$40.00
Student Member ²	\$20.00

1. Family members = two or more members residing permanently at the same address, please provide all names & callsigns.
2. Student member = currently enrolled at NZ secondary school or tertiary educational institution.

Subscriptions can be paid by Direct Credit to our Westpac account 03 1555 0091289 00. Please enter your name/callsign in the transaction description so we can identify who payment is from.

Contact details etc should be updated using our subscription form available on our web site at https://www.zl1is.info/docs/MEMBERSHIP_FORM-A5_V26-1.pdf

Licence Fee increase for Amateur Radio Service:

Radio licencing charged by Radio Spectrum Management (RSM) increased on **1st July 2026**, and for amateur radio repeater, links and beacons that increase was 32% to \$66.00 per annum per licence.

The **cost of sponsoring each Waikato VHF Group radio licence has risen to \$66.00 per annum**.

Our Meetings & Minutes:

The Waikato VHF Group Inc holds **four general meetings each year**, with our Committee meeting on-line approximately one month prior. Our quarterly newsletter which includes notification of our upcoming general meeting, to which all members and visitors are invited, is published after our Committee meets (and determines that meeting date which is also dependent on venue availability). **Minutes** of the previous meeting (Annual or General) are now published at the end of that newsletter for members to read prior to attending the meeting rather than enduring them being read out at the meeting.

Month	Meeting Type	Meeting scheduled	Minutes published in our newsletter
March	AGM	2 nd half March	March N/L following year
June	Normal general	2 nd half June	September N/L
September	Normal general	2 nd half September	December N/L
December	Normal general	1 st half December	June N/L following year

A guest speaker and/or presentation is arranged for most meetings. If you have a suggestion for a presentation or speaker, let one of our committee members know so we can arrange/schedule it.

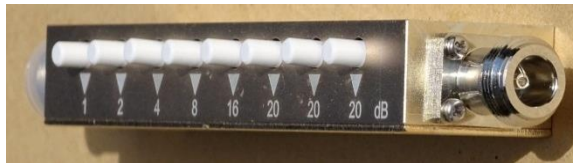
Significantly increased cost of hiring the Events Centre at Te Aroha has led our committee to seek alternative venues, so we'll be **alternating future meetings between Tauranga and Hamilton**.

'For Sale' items on Waikato VHF Group Web site:

When our new web site was created in 2025, we included a page for items offered for sale, see <https://www.zl1is.info/sale.html> Links to this are under the home page header 'SALE' tab.

Items presently for sale include:

50 Ohm push-button stepped attenuator with series N socket connectors, zero to 90dB in 1dB steps. Essential test equipment when measuring fade margin on a radio signal (link or repeater).



50 Ohm coaxial relay, DC to 12.4GHz frequency range, 250 Watt power handling capability, 12V DC coil, single pole double throw with series N socket connectors.



Surge Arrestor, Polyphaser IS-60V-30A floating ground model. Essential protection between solar array or remote power supply and your precious radio equipment. New in original packaging, includes data sheet.



Branch 12 Market Day:

The Waikato VHF Group had a table at the Hamilton Amateur Radio Club (Branch 12) Market Day at Gordonton on 29th August 2026, an event which was well attended. Our table manned by Tom ZL1THG and Dennis ZL1UET netted \$246 for our VHF Group coffers.

JOKES: reprinted from MUSICK POINT RADIO GROUP (INC.) - NZART Branch 86 newsletters

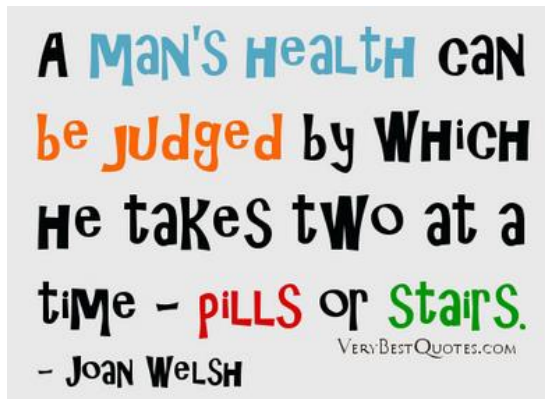
Went to the bar tonight. Good times. Only a 15-minute walk there, but the walk home took 45 minutes. The difference was staggering.

A Senior's version of Facebook:

For those who do not, and cannot comprehend why Facebook exists, I am trying to make friends outside of Facebook while applying the same principles.

Every day, therefore, I walk down the street and tell passers-by what I have eaten, how I feel at the moment, what I have done the night before, what I will do later and with whom. I show them pictures of my family, my dog and of me gardening, taking things apart in the garage, watering the lawn, standing in front of landmarks, driving around town, having lunch, and doing what anybody and everybody does every day. I also listen to their conversations, give them "thumbs up" and tell them I "like" them. And, it works just like Facebook. I already have 4 people following me; 2 police officers, a private investigator and a psychiatrist.

100 years ago, everyone owned a horse and only the rich had cars. Today, everyone has cars and only the rich own horses.



Why don't you see elephants hiding up trees? Because they are very good at it!

NZART 100th Anniversary Conference, Kings Birthday weekend 30-31 May 2026:



Previous NZART Presidents Forum

From L; Terry Carrell ZL3QL 1985-91, Jim Meachen ZL2BHF 1992-97, Alan Wallace ZL1AMW 1997-01, Vaughan Henderson ZL1VH 2012-15, Stuart Watchman ZL2TW 2015-19, Mark Gooding ZL2UFI 2019-23

Adding a Safety Fuse to a Battery Box

Brian - ZL2BRF

Many Battery boxes do not come fitted with a safety fuse. If a fault current occurs the Battery Management System (BMS) of a LiFePO₄ battery *should* protect the wiring. For the 120Ah 12V LiFePO₄ batteries I have, the BMS *should* disconnect the internal cells at 50A. If the BMS does not reliably operate, the batteries, the BMS, the wiring and the box may be seriously damaged or could all go up in flames! Sealed Lead Acid batteries in the same battery box would have no form of wiring protection at all, with equally spectacular results.

Figure 1 shows the original wiring arrangement. As can be seen there is no protection.

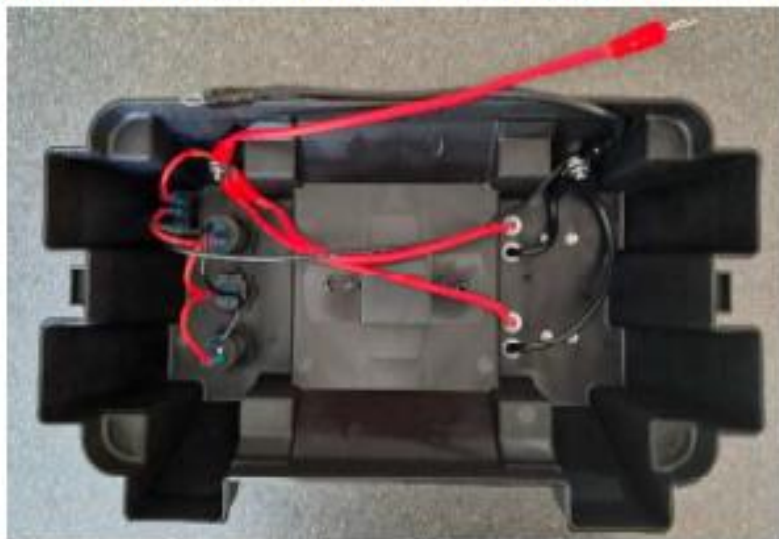


Figure 1 – Original Wiring

Figures 2 and 3 show a protection fuse wired into the circuit. The original battery +ve (red) cable was removed from the battery-box binding post and re-terminated at the fuse holder. The original wiring is 8AWG so a new piece of cable of the same size is fitted between the fuse holder and battery-box binding post.

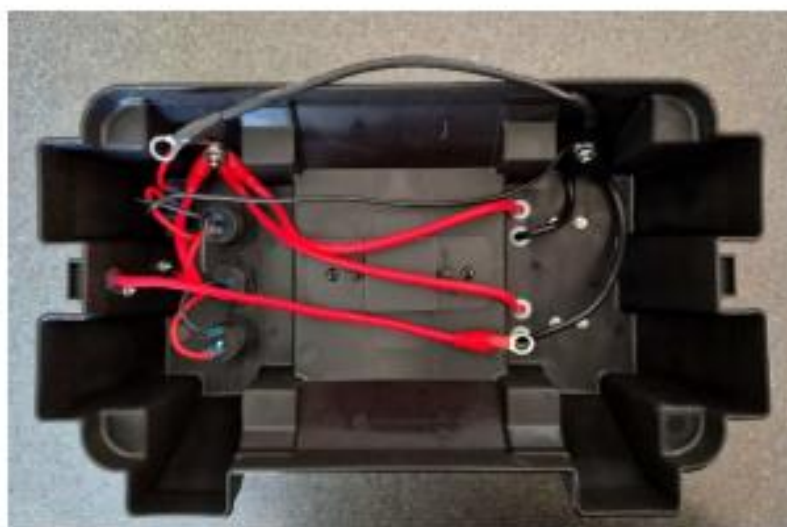


Figure 2 – Modified Wiring Layout



Figure 3 – Modified Detail

You may have noticed the automobile auxiliary power outlets are connected directly to battery-box binding post via a 14AWG cable. Although a short-circuit through a short length of 14AWG cable should rupture a 40A fuse, I will be adding a 20A blade between the battery-box binding post and the first power outlet.

For the main fuse holder, I chose is an ANS-H 1-way bolt-down Midi type. These will take a fuse from 20A to 125A. I purchased my fuse holder on AliExpress complete with a 40A midi fuse for \$3.67.

The lug barrels protrude out of the fuse-holder housing and must be sleeved with heat-shrink. The order of terminals at the fuse-holder stud must go: washer (first) – lug – fuse – washer – nut (last). There must not be a washer between the lug and the fuse – doing so increases the resistance of the connection.



Figure 4 – ANS-H Fuse Holder



Figure 5 – Termination Detail



Figure 6 – Final Installation

It was difficult to bend the power cables around the tight radius between the grommets and the fuse-holder studs. If I was to do this again, I'd use a pair of 10-6 right-angled lugs. A pair can be bought on AliExpress under part number SIK10-6 or T10-6 for about \$5.



Figure 7 – SIK10-6 Right Angled Lugs

Digital Voice modes and my Experiences with them written by Chris ZL2CJ

I've been a Ham for only 4 years now and initially got myself into digital voice aspects of the Hobby, such modes as D-Star, and DMR. My intention was to try out everything in the hobby that I can.

I started off with EchoLink which is an older style connection but still works quite well with many conferences/Nets available. The beauty of EchoLink is you can connect to analogue repeaters. I then found Droidstar <https://droidstar.net/>, an app on the phone which does most digital voice modes (DMR in its various flavours; DMR, YSF, NXDN, REF, XRF, DSC, P25, and M17). To be honest, it was quite good at the time but now is dated and the audio has never been that good. There were links to IRLP and links to 2-metre repeaters as well.

First up I purchased an inexpensive Handheld DMR radio, a TYT MD-390 which also has analogue FM capabilities. There is a DMR repeater here in Hamilton, but you need to programme the radio with a 'code plug'. I initially had help from Doug ZL3DMH, but still struggled to negotiate the art of developing these.

After buying a Icom 52A and Icom 7100, I noticed they had D-Star capability which I wanted to use. Now how to connect to the repeaters and navigate around the system. There was one D-Star repeater in Hamilton which I was able to figure out and started using, however after some time it was removed from service.

Subsequently I came across a SharkRF OpenSPOT4 which meant I could access all of the digital modes and cross-mode as well, <https://www.sharkrf.com/products/openspot4/>. This unit was good, as I could go mobile with my Icom 52A and access all the modes. When going on cruises, I could take it with me and talk to the world without having to connect to repeaters. It's basically a mobile hotspot, plus I didn't have to configure it with Raspberry Pi and or WPSD software.

Later, I got a SharkRF M1KE VOIP Transceiver which meant I could access these same networks on a small device via Wi-Fi connection <https://www.sharkrf.com/products/m1ke/>. It has a similar interface to the OpenSPOT4 pro but with a PTT button !!

Over the past few months there's been several new software options become available which you can use on your mobile phone, tablet or PC. These apps are rapidly developing making it possible to connect to all the Voice digital modes without requiring any hardware whatsoever. Almost to the point of not requiring any physical radios or VOIP devices like I described above.

This can have advantages as new Hams can use these networks without needing to purchase any new equipment. But then some will say what is this about-it doesn't use "real radios" that is certainly another debate to be had.

I'll focus on two new apps in this article which promise so much for versatility and portability.

QSO One <https://qso1.net/> Built by <https://www.qrz.com/db/KD8JJK> Frank KD8JJK, "Ham radio without the hardware", a free app. I built QSO One so you can get on AllStarLink, EchoLink, IAX Direct, DMR, System Fusion, and M17 from a single app, without a Raspberry Pi, a radio interface, or a weekend of Linux. It's free. Sign up with your callsign, download it for Windows or Android, and you're on the air in about five minutes. More platforms are coming.

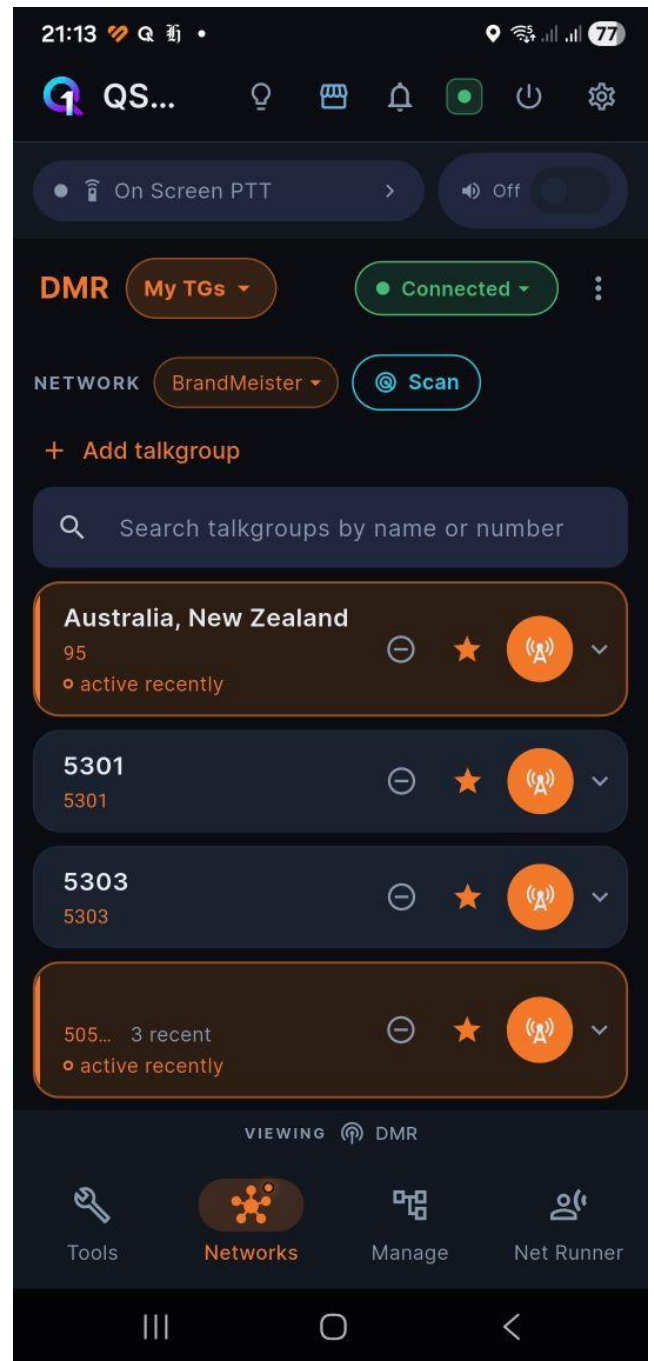
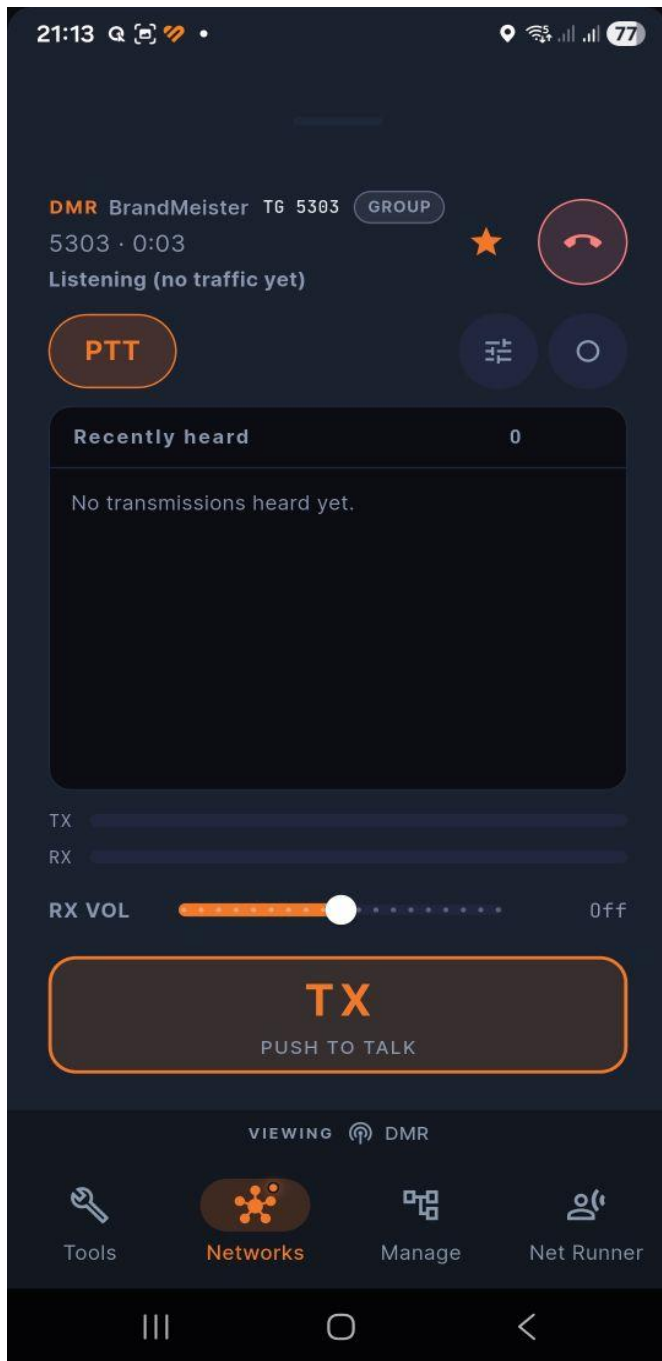
I've now had this app running for some months and are quite excited about it. I've been one of the beta testers for the Android version.

QSO One currently covers the Modes DMR-TGIF, FreeDMR, Brandmeister, YSF, M17, IAX Direct, EchoLink, AllStarLink. As yet no D-Star, but I believe that's coming. Also in the pipeline is iOS support for those with iPhones.

A demonstration of QSO One from down under by Glenn VK4NGA
<https://www.youtube.com/watch?v=x9oYnQ2ac2Y>

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QSO One screen shots:

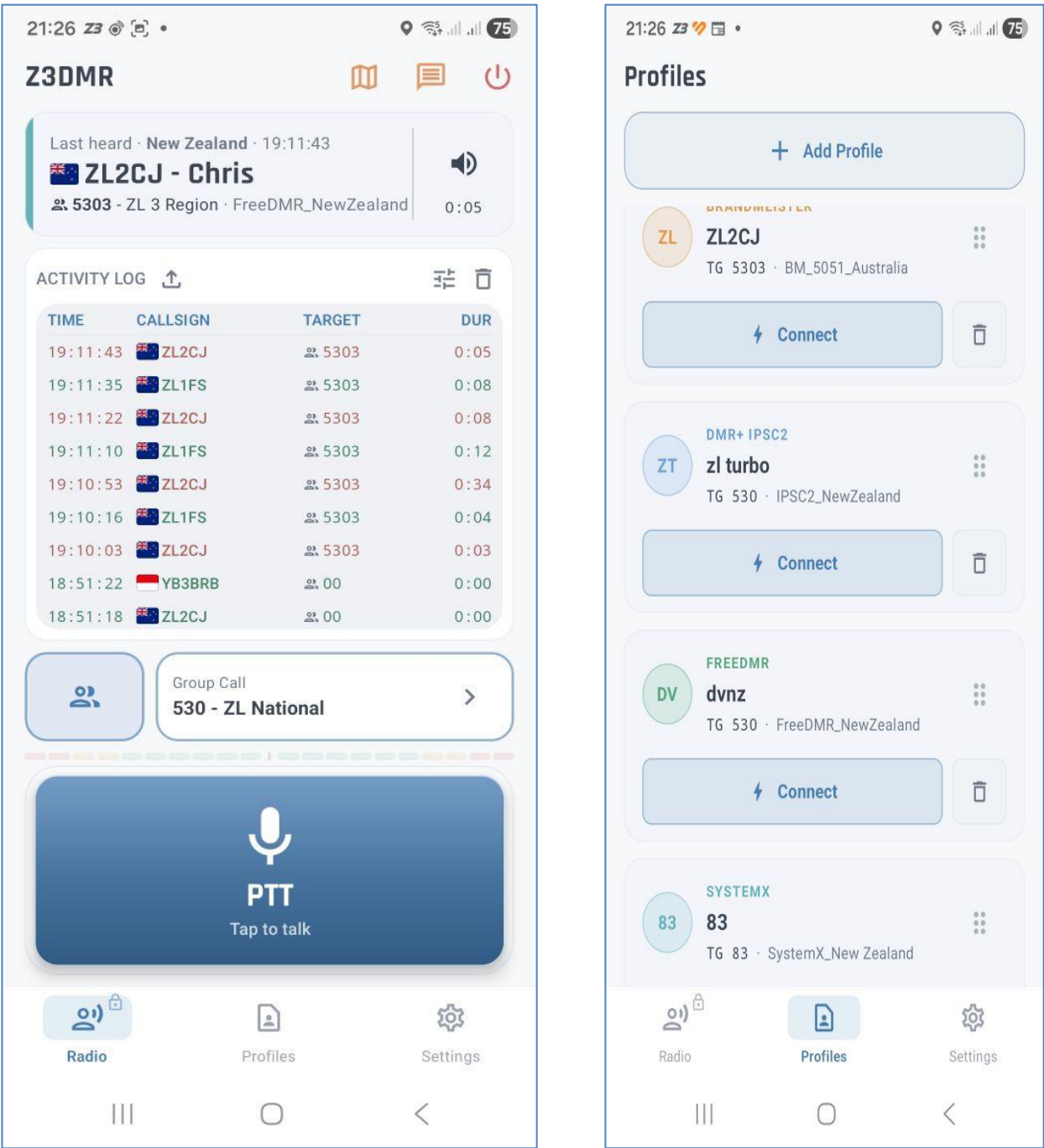


Z3DMR is another new app which was originally set up to cover DMR only but it too is branching out to other networks as in Yaesu System Fusion (YSF). It's currently available only for the Android platform in the Play Store.

Unlike QSO One it includes DMR Plus which for us in New Zealand covers ZL-Turbo network.

Continued on next page

With Z3DMR you add the profile of the network then select the Talkgroup. The profile page may benefit from a grouping system to organise the profiles.



I hope this article has been useful. Just goes to show how far the digital voice world has progressed over the last few months. I'll give a presentation on it at the Waikato VHF Group's December 2026 meeting which is likely to be held in Tauranga.

Feel free to contact me if you want to know anything more.

Regards
Chris Hattan ZL2CJ

*These are the minutes of our last General Meeting
(our March 2026 AGM minutes will be published in the March 2027 newsletter)*



**WAIKATO VHF GROUP Inc.
NZART Branch 81**

Minutes of General Meeting

Held at the Te Aroha Events Centre, 44 Stanley Ave., Te Aroha,
on Sunday, 5th July 2026 at 1.30pm.

Present:- (10 members + 2 visitors) David ZL1DGK (President), Ian ZL1TAT (Treasurer), Neill ZL1TAJ (VP), Roy ZL1BPB, Digby ZL2TUZ, Chris ZL2CJ/ZL1CJH, Rod ZL1TFX, Dennis ZL1UET, Stephen ZL1ANY, Maxine ZL1FW, John ZL1PO, Stephen ZL1AFS.

Apologies:- David ZL1TLQ, Alan ZL1AMW, Tom ZL1THG, Russell ZL1RWR, Wally ZL1WE.
(ZL1DGK /ZL1TFX) – **accepted**

Minutes:- Minutes of our 7 December 2025 (last) general meeting as circulated with our 22nd June 2026 notice of this meeting.

Adopted on motion of ZL1DGK, seconded ZL1TAT – **carried**.

Matters Arising:- Nil

Finances:

- 100% of our 2025 members have renewed for 2026, much appreciated.
- Our bank balances stood at \$2605.71, plus our 12-month Term Deposits \$6,750 reinvested 12 June 2026, and \$8,220.00 maturing 23 September 2026.
- Increase in Radio Licensing Fees from 1 July 2026 to \$66.00 per licence raises our VHF Group annual fees to \$858.00 (13 licences, due in September).

Accepted on motion of ZL1TAT, seconded ZL1UET, – **carried**.

General Business:

- **Kaimai site:** work completed over 2025/26 summer as reported on pages 2 & 3 of our June newsletter
 - Rusted door hinges replaced with grade 316 stainless steel ones,
 - new roof and flashings completed by contractor Rynex Roofing,
 - Rusted tower footings de-scaled and treated with Rust Converter.
- **RSM Radio Licence Fees** increased by 32% on 1 July, now \$66.00 per licence, we've received sponsorship of all but one of our licences for 2026, thank you!

Presentation:

- **Two videos** were shown;
 - From Street View to AI – how Google mapped the world,
 - All the ways Google gets Street View images.

The **meeting closed** at 1535 hrs followed by afternoon tea thanks to David ZL1DGK.

Approved; **D G King ZL1DGK** Chairman Date 29/09/2026.