



Founded 1979 Incorporation No A6677 P.O. Box 692, Shepparton 3632  
August 2020

**VK3RGV repeaters and transmitter operating frequencies**

53.725MHz (-1 MHz offset), **In Service**

146.65MHz (-600 kHz offset), **In Service**

438.2MHz (-7 MHz - offset -D-Star), **In Service**

438.650MHz (-7 MHz offset and 91.5 Hz tone access only), **In Service**

438.900MHz (-7 MHz offset- DMR repeater), **In Service**

439.775MHz (-5 MHz offset), **In Service**, IRLP (node #6990)

VK3RDS, 438.7625 MHz (-7 MHz offset DMR repeater) **Shepparton on test @ VK3YNV QTH**

Access to most analogue repeaters is by sub-audible 123 Hz tone or noise/carrier mute (less sensitive).

Club informal on air get togethers - Wednesday evenings. All welcome. Club call sign VK3SOL:-

2mx repeater 8.00pm 146.650 MHz,

3.63 MHz SSB ± interference 8.30pm.

The vintage radio club have a sked at 11.00am Sunday on the 2 mx repeater.

**Meetings occur on the first Saturday of the month at 1pm. Due to the pandemic they will temporarily be conducted on air via our 2 metre repeater and Peter VK3FPSR will officiate as President.**

Variations in these times, days and location are normally notified in the preceding newsletter.

Website – [www.sadarc.org](http://www.sadarc.org) or [www.sadarc.org.au](http://www.sadarc.org.au) Face book - [www.facebook.com/sadarc.org](https://www.facebook.com/sadarc.org)

Info for the page contact - Denny French on [denny3782@gmail.com](mailto:denny3782@gmail.com)

**Note:** Want to get your licence? SADARC has examination assessors, contact the secretary for details.

The following repeaters do not belong to our club but provide good signals for many members.

Mount Major VK3RDU repeaters, TX operating frequencies, 146.850 MHz and 439.875 MHz

UHF CB Repeater WBT03 Mt Wombat Channels 3- 33, 476.475 MHz, **Off air** \* 24/9/2020

**DISCLAIMER:-** No guarantee is given as to the accuracy of information in this newsletter.

**Warning:** - There is a danger of electrocution or injury when working on electrical/radio gear or working at heights doing antenna work. You do so at your own risk.

President: - Peter Rentsch

VK3FPSR

[peter@rentsch.com.au](mailto:peter@rentsch.com.au)

Secretary: - Andy Ashley

VK3AJA

[secretary@sadarc.org](mailto:secretary@sadarc.org)

Assistant Secretary:- Geoff Angus

VK3ZNA

Vice-President: - Barrie Halliday

VK3KBY

Treasurer: -Andy Ashley

VK3AJA

[secretary@sadarc.org](mailto:secretary@sadarc.org)

Membership Sec: - Andy Ashley

VK3AJA

"

Webmaster: - Ray Gardner [ray@etheira.net](mailto:ray@etheira.net)

VK3YNV

Publicity Officer: - Vacant

Communications Managers (External Events):- Bruce (VK3PNG) 0427 715 663 & Darren (VK3HEN) Glasson

Tech. Committee: Geoff VK3ZNA, Ray VK3YNV, Josh Gardner & Rodney VK3UG – with power to co-opt.

Newsletter: - Rodney VK3UG (Editor) [rodlynn6@bigpond.com](mailto:rodlynn6@bigpond.com)

Peter & Andy (Printing/ Distribution)

## Presidents Report September 2020

To all those who called into our last meeting, thank you for making the effort. It is greatly appreciated and I hope that all members are well and not affected directly by COVID. One of the most difficult things Karen and I have had is not being able to see family. Finally, last weekend our daughter who lives in Geelong and her husband and two Grandchildren were able to visit. This is difficult for us but nowhere near as difficult as it is for those who have lost work. Keep safe and look out for your neighbour.

At the last meeting I raised the issue of us still having to mail out some Newsletters in this day and age. It was moved that this Newsletter be the last one we post out. If you have any major objection to this could you please contact the Secretary to arrange a method of receiving the Newsletter. It will still be emailed out and for those not on email it is always readily available on the SADARC Website [www.sadarc.org.au](http://www.sadarc.org.au)

Please remember that Subs were due on the 1<sup>st</sup> July and as per normal you have until the Hamfest to be a financial member. There is no Hamfest this year so we will make the 13<sup>th</sup> September the closing date for sub payments which was when the Hamfest was to be held.

Do not forget that our October Meeting is also our AGM. We will hold the AGM immediately after our regular meeting.

That is it for this month and I look forward to hearing you all on the 3<sup>rd</sup> October for our “on air” meetings

Cheers for now.

Peter Rentsch  
President

## CLUB CALLANDER

3<sup>rd</sup> October - Regular Meeting and AGM – 2m Repeater Mt Wombat 1.00pm

7<sup>th</sup> November – Regular Meeting – format to be advised

5<sup>th</sup> December – Regular Meeting – format to be advised

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## Annual Report for the Shepparton and District Amateur Radio Club. 2020

It is with pleasure that I present the annual report for SADARC for the year 2020 and my 8<sup>th</sup>..

This time last year who would of thought, in our wildest dreams what 2020 has brought. Despite the difficulties the Club has continued to function very well. We have a good roll up at our on air meetings, the Website is being used and now with the advent of the Forum on sadarc.org.au it again creates a link to keep us together. Thank you to all those who regularly join our meetings.

Our November meeting saw a visit from Peter Brennan VK3TE talking about DMR as well as our usual participation in the Murray QUAD.

December saw our regular Christmas gathering with the Vintage Club of North East Victoria. This Luncheon is enjoyed by all and it is great to see the partners along as well. We have a unifying bond of Electronics in one form or another. Hopefully this year we will be able to enjoy each others company again.

Our February meeting saw a great start to the year with a great roll up with a presentation by Jason VK3FNQS on Digital Modes.

March was the feather in the cap for the Shepparton and District Amateur Radio Club. We were able to use the facilities of Radio Australia and connect our Amateur gear to their antennas. This caused some great excitement within the Club as well as around the World. Approximately 1000 contacts were made on the 48 hours of operation that we had as well as some EME.. A special thankyou to all those who helped in any way. What a great weekend.

In April our lives were turned upside down and since then all our meetings have been on air. This is working as well as can be expected but all members are looking forward to the day we can meet face to face again.

Our Repeaters are all working fine with the exclusion of the 2m antenna. A fix for this is in place but between COVID and the winter weather it has not occurred. As soon as practical this will be fixed.

Some thankyou's need to be made. To the members of the executive and technical committee, thank you for the work that you have done throughout the year. To those that aren't on any committee but help out as best they can when they can, thank you. To all those members that turn up to the meetings both physically and on air thank you to you as well. It makes it worthwhile putting some effort into the meetings when you know you are going to get some appreciative members along.

I must in this report pay homage to Ron Burns VK3COP SK who passed away late last year. Ron was a Life Member of this Club and had been a long time Treasurer. Ron had some great little idiosyncrasies and we all greatly appreciated the work he did.

Some time I wonder why we do Amateur Radio and what is the attraction. I have also been asked many a time why we do it. I would like to finish with this little document I found on a QRZ page.

*We live in a time when sophisticated communications technology is available off the shelf. Today amateur radio doesn't offer much in terms of technical capability that isn't already met or exceeded by consumer grade products; that ship sailed many years ago. With that high degree of availability comes a high degree of abstraction. We open our mobile phones' text clients and type messages and are completely disconnected from the processes that make the letters appear on our screens and on the screens of our recipients. The appeal of amateur radio, I would then say, is to make electronic communication a more participative, tactile experience. When pointing a beam antenna directly at where a low earth orbit satellite is expected to be or tapping Morse code on a straight key or dialling up a favourite net's frequency one becomes, to borrow an expression from software engineering, a little closer to the metal. There's an intrinsic satisfaction in that close-to-the-metal experience. It's the same reason people plant vegetable gardens or take up woodworking even though vegetables and furniture can be easily purchased in stores.*

Respectfully submitted,

Peter Rentsch  
VK3FPSR

President SADARC 2019-2020.

## **Vale – Bruce Gillies VK3AGG --18/10/27 --to – 25/8/2020**

Bruce was an amateur in Shepparton long before the Shepparton Amateur Radio Club even existed and became a very early member when the club formed.

He was a very keen DX chaser. Some will remember his 20m quad near the corner of Wyndham St and Balaclava Rd here in Shepparton. Later he changed to Yagis but he had a lot of success with his quad.

Bruce and Max Johnston, VK3DSF, we're heavily involved with building our hut on Mt Wombat and obtaining the licence for our original 2M repeater.

I had the honour of working under Bruce's guidance at Radio Australia for many years and retain great respect for his knowledge and ability.

Bruce and his wife Marge were easy people to like. We are all poorer for his passing.

Pat O'Shannessy, VK3OV.

## **SADARC June2020 Meeting Minutes**

**1:00 pm 5/09/2020**

Held "On Air" VK3RGV 2 M repeater.

In Attendance: VK3MRO Tibor (check in only), VK3FTRK Geoff, VK2ACR Rob, Stevo, VK3FPSR Peter, VK3EB Dallas, VK3AJA Andy, VK3KBY Barrie, VK3ASK Peter, VK3PNG Bruce, VK3VNV Ray, VK3ZE Huntly, VK3UI John, VK3ZYZ Denys, VK3AFD Arthur, VK3YYY Ian, VK3UG Rodney, VK3BF Alan, VK3FNQS Jason, VK3NQS Colin, VK3ZNA Geoff, VK3BPH Kevin, VK3FBEN Peter.

Apologies: VK3TEX Les.

In: Membership, QSL cards, Email re exams.

Out: info for exams. Moved by Alan, second by Geoff. All in favour.

Minutes last meeting: Moved by Geoff, second by Kevin. All in favour.

Peter reminded about thank you cards, Geoff will arrange.

Andy will send membership reminder via email.

Reports:

Financial: Read by Andy. Moved by Bruce, second Peter. All in favour.

Technical: Read by Ray, spoke about power management unit for Mt. Wombat and suggested a visit to site before it gets too hot! Also, a possible issue with ARV 70cm repeater with RF feedback?

Rodney has mentioned antennas need to be looked at and possible issues noted before site visit. He has suggested a problem with the 6m antenna pattern?

Geoff has mentioned the same as above. And should be checked and logged for info. Before Cherrie picker is organised.

Ray mentioned that website now has a forum!!! Please join and contribute.

Report moved by Arthur, second by Barrie. All in favour.

General Business: Read by Peter.

Email from Ray asking about an RF detector and suggesting the club purchase one. Ray has explained the device and the cost about \$400 the device is a direction finder using SDR receivers and would be good to find locations of interference. Ray has suggested it would be a handy tool for the club.

Rodney has added that the idea is good and has suggested if we should discuss it on the forum.  
Ray will put info on forum for discussion. Dallas has asked the freq. covered and Ray said at least 30 MHz to 1.5 GHz.

Peter mentioned newsletter should be emailed out and not sent via snail mail and asked for members input on this. (due to cost of printing supplies and stamps) several members have agreed, and we will put it to a vote. Peter (ASK) has suggested a last mail out with "email and website only from now on"  
October newsletter will be the final "snail mail "one.  
Motion moved by Peter, Second Ian. Vote taken, all in favour.

Peter has suggested we go over the membership list and Andy reminded all to send in form when paying.  
Peter has suggested adding phone number field to form. Ray will fix the one on the webpage. Rodney has mentioned the email address need to be updated by members.

Peter has mentioned QSL cards and has provided info on using the bureau to distribute them and there may be a cost. Andy and Ray have the form to submit. Andy will fill in form and submit.

We will also post some QSL cards to Rex and Thomas. (and to Peter)

Peter has mentioned we should register for charity at IGA? And will check.

Peter has mentioned the AGM is coming up and we will not be able to do face to face. Suggested to run it from the 2 m repeater.

Peter has moved we do the meeting on air after next month's on air meeting. Second by Geoff. All in favour.

Peter reminded us about prize for number of contacts to club members for month. Also, the Xmas lunch?  
Not sure what will happen yet.

Geoff has mentioned that Sunday restriction may change, and this may affect the Xmas lunch.

Ray has suggested that we should do outdoor BBQ for social distancing and to give thought to location?

Geoff has mentioned he would be happy to host a BBQ at his property.

Meeting Closed  
2:22 pm.

## Editor's Ramblings

- I have asked for information on a 6 Mx vertically polarised base station antenna that is being produced by one of the Melbourne clubs. I understand it will be \$130 plus postage, which is better than \$269 for a commercial equivalent. I hope to have more details by next month.
- Have you heard of the ***Radio Amateurs Old Timers Club Australia Inc.***? A big percentage of their members are older amateurs but not all. A number of SADARC members and others that we may know locally are also members of RAOTC such as Graeme Scott VK2KE, Roger Conway VK2RO, David Waring VK3ANP, Ed Roache VK3BG, Stan Roberts ex – VK3BSR, Dallas James VK3EB, Ian Sturman VK3JNC, Bill Magnusson VK3JT, Barrie Halliday VK3KBY, Stewart Mair VK3PR, Ray Wales VK3RW, Rodney Champness VK3UG, John Blackman VK3UI, Geoff Angus VK3ZNA and Trevor Pitman VK3VG.

Don't think that they are not switched on as many have been responsible for a number of technical firsts in both amateur and professional radio circles. They have a very interesting six monthly magazine

of around 60 pages called **OTN** which has articles on marine radio, navigational aids (Ian Sturman worked with these), morse code, early microphones, moon buggies (yes moon buggies), radio proximity fuses (as used in anti aircraft shells, and early ones even used sub-miniature valves in them about the size of a 10 cent coin). These are just a few of the articles in the latest issue.

If you are interested in enquiring about the RAOTC email the club on [raotc@raotc.org.au](mailto:raotc@raotc.org.au) . I recommend this club to you and the magazine is first class.

- Andy VK3AJA has been experimenting with a HF loop and getting quite satisfying results. Andy's article/review will appear in an early newsletter. A very interesting piece of gear.
- Things are changing. President Peter put forward the idea of updating our membership records and our method of distributing our newsletter. This was carried when moved and seconded with no dissension. As from next newsletter it will only be distributed by email (**NO snail mail**, as delivery is erratic – you may not get it in time for a meeting, the costs of organising duplicating and postage, particularly at this time with Covid19 are becoming difficult and costly), but will be available on the internet on our website [www.sadarc.org.au](http://www.sadarc.org.au) . If any member doesn't have either email or internet please advise the secretary. If you do have email or internet and haven't advised the club please do so that you do not miss out on what is happening. Our sister club the Vintage Radio Club faced the same problems and has re-organised delivery of their newsletter, as have many other clubs both radio and those with other interests..
- Have looked at the Forum section of our club website. You should as you will see many things there that may be of interest to you. We have some innovative members and Ray is presenting them in the Forum section of the website.
- The Technical Committee is getting together shortly to organise a review of the repeater installations on Mt Wombat.
- The performance of all repeaters will be checked, along with the cavity filters and the antennas. We have main and standby antennas for most repeaters and want to test their relative performance over some distances. It is known that the 2 mx repeater performance on the current antennas (this uses a separate antenna for the transmitter and receiver) is very good to the West, whilst the 6 mx repeater performance has been disappointing with the stacked antennas compared to the single antenna it replaced. We are aware that there is a problem with the UHF CB repeater system, the repeater itself is okay but either the cavities have drifted in tuning or the antenna is faulty. As we do have main and standby antennas, checks will be made to ascertain as much as possible the general radiation patterns and strengths into various areas from the different antennas.
- When this is to take place we would need a number of operators (preferably towards the extremities of the coverage of the repeaters) to assist with meaningful appraisal of the performance s observed. Some will have fairly accurate metering facilities and will be able to tell within a dB or two the relative performance of the various antennas. Others with sets that go from zero S meter readings to 60dB over 9 with very little difference in signal strength will still be able to give subjective assessments. Rob VK2ACR as an example would be able to give us some very interesting reports. If a number of members can make yourselves available we'd appreciate your help sometime soon – once we get fully organised. When organised it may take us most of a day to accomplish tests we want to make. Let Ray, Geoff or Rodney know if you can assist.
- Once all of these tests are made the work on replacing the (crackly) 2mx antenna will be organised and probably the 6 mx antenna tests to determine whether we have a phasing error on the antenna mounting. The UHF CB repeater will probably be back on line then in time for the fire season.



## Denys VK3ZZ's frequency control of transceivers.

This document is to explain how to add an Arduino driven VFO to the Codan 8525B radio for fully tunable frequency coverage.

The unit I started with had the front panel 2 digit LED channel display.



The 8525A is similar, but the control chips are different. This will only apply to the 8525B, although it will be modifiable to suit the 8525A.

I do not know the differences to the 8525S or the 8528, but it may work in them too.

Originally the intention was to remove the CPU and EPROM and drive the existing PLLs, but it worked out a lot easier to have the Arduino Nano controlling a Si5351 triple VFO instead.

This modification is fully reversible as it involved 3 cuts and 2 links.



This is the “brain” of the system. The Arduino Nano board.

It is a pretty versatile board, and pretty easy to use. The Arduino programming environment is downloadable for free.

<https://www.arduino.cc/en/Main/Software>

There are many courses to teach how to use it. I recommend you have a look at.

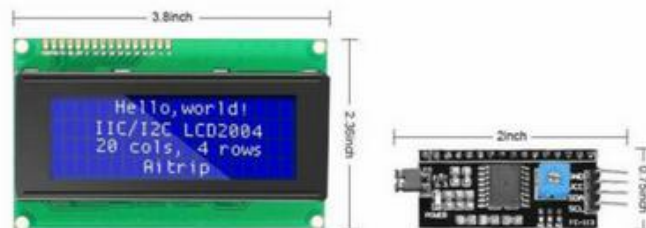
<https://randomnerdtutorials.com/> for very good instructions.

The three signals required first mixer, second mixer and sideband generator are all produced from this little board.



The outputs can be taken from pins 0, 1 and 2, but I use coax cables screwed to the connectors supplied, and they solder to the CLK0 – CLK2 positions.

A couple of display options are available.  
First, a 20x4LCD.



Or an OLED display.



Both use I2C 2 wire communication driven from the Arduino.



This is done by removing the top covers of the PLL enclosures, shorting the VCO FET gate to 0V, and cutting and lifting one end of the buffer input resistor. A 10nF cap is soldered onto this resistor free end, and connected to the coax from the Si5351 board.

DO NOT SCALE

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D13  
HP5082-2830  
[CAUTION]  
USE LOW TEMP  
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(220°C)  
STATIC SENSITIVE

PCB 07-01027 ISS 5

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**More next month on Denys's modifications to the Codan 8525 series HF transceivers.**



Terry Fahey at Radio Australia in 2007 inspecting a fully solid state 1 KW Blythe Broadcast Band transmitter. The Radio Australia staff looked after a number of small broadcast band transmitters as well as the 100 KW transmitters on site.