



Repeaters: VK3RGV 2m - 70cm - Packet.
Freq: 146.650 - 439.775 - Packet 147.575

Founded 1979

Incorporation No. A6677
P.O Box 692 Shepparton 3632

REPEATERS VK3RGV 2m & 70cm
VK3RGV B D-Star
2m IRLP Node # 6992
CLUB CALL SIGN VK3SOL

President:- Peter Rentsch
Vice President:- Vacant
Secretary:- Alan Ransley
Treasurer:- Ron Burns

VK3FPSR
VK3AO
VK3COP

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. You do so at your own risk.

September 2012 Newsletter:

Presidents Report September 2012.

Well it's done and dusted for another year, the Hamfest is over and we can all now relax for a bit. Thankyou to all those who contributed in any way to make it such a successful day. All indications are that we made some money and that allows us to continue improving our Club facilities. A splendid effort by all those involved. I received an Email during the week from a VK1 amateur that attended that Hamfest congratulating us on a great day and great value for money. I have also heard comments on 80m from attendees praising the hamburgers and the day.

Another aspect of the day is the fellowship that people experience, not only our Club members in the knowledge that they have done a good job but also with the attendees who meet with each other and have a good chin wag. A great day with a great atmosphere.

At our next meeting I would like to carry out a de brief on the day and get your feedback on what we did well and what we need to improve. Thanks again to all who helped in any way.

Talking of our next meeting, it will be held on Saturday 6th October commencing at 1.00pm. Following our regular meeting will be our Annual General Meeting at which time office bearers for the following year will be selected. A number of positions within the group need to be filled so if you would like to become involved in the running of your Club please put your hand up to help.

For the Club to be successful in its endeavours we need a group of people who are positive in their direction and willing to get in and get the job done in a friendly and cooperative manner. Yes, there will be differences of opinion and good healthy non-vindictive debate is good for all. This leads to the best outcome and merging of ideas that then solidify into the best

direction the Club can take. Please also remember that those involved in the Club donate their time to a hobby that they enjoy and are proud of.

That's it for me this month and I look forward to seeing you at the October meeting.

Peter – VK3FPSR
President - SADARC

Minutes for SADARC

Saturday 1 Sept 2012

Meeting Open: 1300 hrs at the Mooroopna Club Rooms

Present:

VK3FPSR, VK3COP, VK3AO, VK3PXJ, VK3OV, VK3TJS, VK3DSF, VK3ELV, VK3UG, VK3TEX, VK3DAG, VK3GMV, VK3GEB, VK3ENV, VK3VG, VK3FBEN, VK3BG, VK3BPH.

Apologies:

VK3FALN, VK3VCE, VK3FNDB, VK3ALF

Previous Minutes:

Minutes moved as correct VK3BPH Kevin
Second: VK3UG Rodney

Business arising from minutes:

Peter updated the group on the proposed "Murray Quad"

The club will require 12 to 15 radio points. Approx 3 at Yarrowonga, 2 on the run section, 3 to 4 for the bike ride and the balance to cover the canoe section on the river from Cobram to Tocumwal. Interested parties please contact Peter.

The Quad will commence at Yarrowonga 0700 and finish around 1900 at Tocumwal

The club will also require a co-ordinator or "Person in charge" for the day. Any volunteers??

Correspondence:

Inward:

Two letters were received with club membership payments

A letter from the WIA regarding the importance and function of the WIA. The letter also included an outline for "Media releases". Handed to members for comment.

Peter also received a letter of resignation from Michael, VK3FNAA. The letter outlined Michael's reasons

A late letter of resignation was also received from the vice president, Ed, VK3BG. Ed also outlined his reasons.

It was moved by Peter and seconded by John that a letter of thanks be forwarded to Michael thanking him for his contribution to the club during his membership

Outward:

Nil outward from VK3AO (Sec)

Trevor produced a flyer to be forwarded to Shepp paper advising them of the club comms day and “when, where and how” and come along and see what amateur radio is about

Treasurers Report:

Report was handed to members by Ron VK3COP.

Accepted as correct

Moved: Ron VK3COP

Second: John VK3PXJ

All in favour

Technical Report:

Rodney reported all repeaters are operating well

Toby and Phil are looking at alternatives to the DSTAR internet connection

Phil is also continuing work on the 6m repeater. The DSP audio module is being repositioned in the cct to improve the voice quality

Also work is continuing on the LPF on the output of the 50 watt amp. The unit is working well

Rodney reported he accessed the 6 m repeater from south west of Bendigo, confirming its exceptional range

A question was raised regarding installing beacons on Mt Wombat however Ed advised all beacon frequencies have been allocated by ACMA

General Business:

It was reported by Alan VK3AO to Peter VK3FPSR of a conversation heard on 20 m (14.214 MHz) by an operator using the club call sign VK3SOL. Peter contacted ACMA and members are requested to monitor when practical 20m and advise of any details if heard

A motion to move the AGM forward to October 6 was moved by Kevin and seconded by Max. All in favour

Members were advised to to prepare for nominations as all positions will be declared vacant

Trevor indicated the potential of litigation with regard to the scout hall antenna support pole as it could be considered unsafe. The club will make enquiries as to the ownership of the said pole and then remedy the situation as required

DSTAR DSTAR DSTAR

The ongoing views on the DSTAR internet connection were raised yet again. It was stated, “The issue is the cost of the internet connection NOT the actual DSTAR repeater”

A motion was moved by Trevor and seconded by Ed that as of the AGM the internet connection will be disconnected

Enough attendees were in favour to carry the motion

It was raised that JOTA week is in October and no contact has been made at present by the scout group to the club

Hamfest:

John reported that 28 tables have been booked including 3 for NBS

No Vertex

No WIA

Tables are still available and Peter will place an add on VKHAM advising of this

Door prizes:

A dipole from NBS

Strictly Ham will donate but have not advised what.

TTS \$100

Jaycar will donate a soldering station to the value of \$250

Jacek will donate a sandwich press

Pat will open doors at 0630 for setup on Sunday, and allow entry for commercials at 0745

A few last moment details were discussed:

Jacek requested a couple more women to help in the kitchen

Someone to sell raffle tickets

Door duties (Steve)

Public address.....Peter has in hand from Rotary

Michael to forward a PowerPoint presentation

Max to provide a "talk in" for out of towners on 2m

Wheelchair access

Donations that have been made to club previously and are still at the clubrooms should be taken to hamfest and hopefully sold

Rodney advised a tour of Radio Australia will be conducted at 1400hrs after the hamfest if sufficient numbers. Peter to advertise on VKHAM

Next meeting 6th October 2010

Meeting closed 1445

Regards

Alan VK3AO

PS: Due to my part time work increasing from the initial of 2 days per week, to 3 then 4 and now back to full time, I will not be seeking re election as secretary.

Thank you to all for your support while I have been secretary.

AR

Mt Wombat Technical Report August/September 2012

(1/9/2012)

Sorry but I missed the deadline for the August newsletter.

The repeaters on Mt Wombat are working well from our observations and all user reports. Phil VK3ELV and Toby VK3PNF are exploring ways and means to keep the internet costs for running the **D-Star repeater** down to a level that the club can comfortably finance. Do other members have practical ideas? Nothing further heard about the **APRS** modem for the **APRS** repeater, so Ray has not been able to do any work on this.

Phil is working steadily on the upgrades for the **six metre repeater**. After the last report Phil removed the repeater and altered the position of the DSP module in the audio train between the receiver and the transmitter. He also increased the compression of the audio going into the transmitter by around 3dB. With this work done and the repeater reinstalled there is a noticeable improvement in the level of audio signals from amateurs who have low deviation (audio volume) out of their transmitters. It may pay to have the deviation level checked out of some users transmitters or to modify how we hold the microphone. This applies to all communications.

Phil has built and tested a low pass/harmonic filter to put on the output of the **new six metre transmitter**. It has around 0.4 dB of insertion loss (this is an extremely low figure, excellent in fact) and commences attenuation of any spurious signals above 56 MHz. The attenuation of signals in the FM band (2nd harmonic of 53 MHz) is between -45 and -60 dB and in the two metre band (approximately the 3rd harmonic of 53 MHz) it is between -75 and -80 dB, a very good filter response. On top of this is the normal harmonic attenuation of the tuned circuits in the transmitter output may add at least another 20dB to these figures. This ensures that any garbage getting out of the transmitter output at say the input frequency of the two metre repeater is attenuated. Whilst such a good filter may not be 100% necessary, it does mean that any inter-reaction between repeaters is unlikely. Phil is now working on a narrow filter to fit between the 6 metre exciter and the PA stage to eliminate any low level spurious signals coming from the exciter. This is a much slower undertaking but he is having some encouraging results from his experiments with coaxial notch and peak filters.

Have members had a think about the upgrade proposals for the three analog repeaters that were written about in the last Technical Report, that is for an extra bay on the 6 metre antenna and a DSP module each for the 2 metre and the 70 cm repeaters? If money has been of concern, the Hamfest takings should allay members' fears that financially we cannot do this work. As a result of the query last news letter concerning extra facilities on Mt Wombat, it was suggested that a beacon be installed. Ed stated there were no frequencies available, whether he meant for six metres or for any band I'm not sure. Anyone got any thoughts on this?

Rodney VK3UG on behalf of the Technical Committee.

Do you know your Resistors?

A resistor is an electronic device that offers obstruction to the flow of electric current.

It can be defined as voltage per unit current through a conductor.

Resistance(R)= Voltage (V) / Current (I)

i.e. $R=V/I$

The unit of resistance is ohm denoted by Ω .

The circuit symbol of a resistor is:



In reality, a resistor looks somewhat like this:



It has no polarity (i.e. + and -) like a battery and can be connected either way in a circuit.

When you ask for a resistor at a store you need to specify 3 things:

1. Resistance
2. Power handling capacity (wattage)
3. Tolerance

The *resistance* is the value of the resistor in ohm . It can also be in kilohm ($k\Omega$) or megaohm ($M\Omega$).

Here $1k\Omega = 1000\Omega$

And $1 M\Omega = 1000k\Omega$

The power handling capacity of a resistor determines the amount of current that can be passed safely through it. It is specified in watt (W). The normal resistors that we use will have a $\frac{1}{4}$ W capacity. This means that if the resistance is $1k\Omega$ and $\frac{1}{4}$ W , then the max. Current that can be passed through it is given by:

$$I = \sqrt{W / R}$$

Where I is max. Current, W is the wattage rating, R is the resistance. For the $1k\Omega$ and $\frac{1}{4}$ watt resistor,

$$W = \frac{1}{4} = 0.25 \text{ w}$$

$$R = 1k\Omega$$

Hence $I = 16\text{mA}$ ($\text{mA} = \text{milliamp} = 0.001 \text{ amp}$) . This is the max. Current that can flow through this resistor.

The resistors are available in $1/8 \text{ W}$, $1/4 \text{ W}$, $1/2 \text{ W}$, 1W , 2W and so on.

As the wattage increases the resistor's cost tend to increase and they also get bulkier.

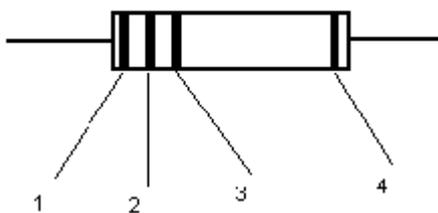
Tolerance is the extent to which the resistor value sways from the original value. You may think as to why the resistance value should change from the printed value? Well, we live in a world that is far from perfect and resistors are no exceptions. Their value changes mainly due to the change in temperature.

The tolerance values of commercially available resistors are usually $\pm 5\%$, $\pm 10\%$ and $\pm 20\%$, where the value indicates the % drift from the original value.

e.g. , if the resistor value if $1\text{k}\Omega$ and has a $\pm 10\%$ tolerance, it means that the actual value of the resistor may be between $1\text{k}\Omega \pm 10\%$ i.e $1\text{k}\Omega + 100\Omega$ or $1\text{k}\Omega - 100\Omega$ i.e. $1.1\text{k}\Omega$ to $0.9\text{k}\Omega$

How to identify the resistance value from color bands:

Hold the resistor as shown below:



Three bands that are close together are to the left.

Then colors of:

Band no.1 signifies the 1st digit

Band no.2 signifies the 2nd digit

Band no.3 the multiplier.

Band no.4 the tolerance.

Band Color	Band 1 and 2	Multiplier	Tolerance
Black	0	1	-
Brown	1	10	1%
Red	2	100	2%
Orange	3	1000	-
Yellow	4	10,000	-
Green	5	100,000	-

Blue	6	10e6	-
Violet	7	10e7	-
Grey	8	10e8	-
White	9	10e9	-
Gold	-	0.1	5%
Silver	-	0.01	10%
No Color	-	-	20%

For example:

Band 1 =Red

Band 2= Violet

Band 3= Orange

Band 4= gold

Resistance = $27 \times 1000 = 27000\text{ohm} = 27 \text{ k}\Omega \pm 5\%$

Band 1= Brown

Band 2= Black

Band 3 = Red

Band 4 = Silver

Resistance = $10 \times 100 = 1000 \text{ ohm} = 1\text{k}\Omega \pm 10\%$

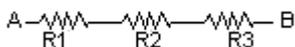
The standard values available commercially are have the first 2 digits: 1,12,15,22,27,33,39,47,51,56,68 or 82

Resistors in series and parallel: (added Jan 26th,2001)

Sometimes, resistor values other than the standard available values are required for a circuit. In such a case the required value is obtained by connecting a number of resistors either in series or in parallel.

Series Connection:

In series connection, the resistors are connected end to end as shown below:



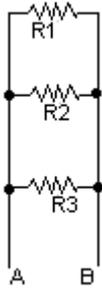
In such a connection, the total resistance between the terminals A and B is the sum of individual resistances.

i.e., $R_{ab} = R1 + R2 + R3$

For example, if a 2.2K and 3.3K resistors are connected in series, the total resistance is $2.2+3.3 = 5.5\text{Kohm}$.

Parallel Connection:

In parallel connection, the resistors are connected as shown below:



In such a case, the total or effective resistance between terminals A and B is given by:

$$1/R_{ab} = 1/R1 + 1/R2 + 1/R3$$

i.e. the reciprocal of the effective resistance is equal to sum of the reciprocals of the individual resistances.

If there are only two resistors, the above formula reduces to:

$$R_{ab} = (R1 * R2) / (R1 + R2)$$

e.g., if two 1K resistors are connected in parallel, the effective resistance is $(1 * 1) / (1 + 1) = 1/2 = 0.5K = 500 \text{ ohm}$.

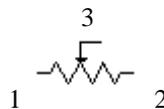
Variable Resistors:

The resistors studied above are "fixed" type, i.e their value cannot be changed. There is another type of resistor called as the variable resistor whose resistance can be varied. They are called as "Potentiometers(pots)" or "Presets".

A potentiometer looks bigger than a preset and is used for frequent variations. The preset is used for setting up or calibrating a circuit and once done is usually not touched often. A common example of a potentiometer is the volume control on your cassette player.

Usually all pots and presets have 3 terminals, the outer 2 are fixed ends and the middle terminal gives a variable resistance along with either of the other two.

The circuit symbol is:



The terminal with the arrow(3) is the variable terminal.
The terminals 1 & 2 are fixed.

The pots value is specified as the max. value of resistance it can provide. For example, if the pots value is 10K it means its resistance can be varied between 0 to 10K ohms.

In the above figure, if you use 1 & 2 to connect the pot. to the circuit, the resistance is fixed and equal to the max. value (in this case 10K ohm)

If 1 & 3 OR 2 & 3 are used , it provides a variable resistance from 0 to 10k as the pot's shaft is rotated.

Formulae to memorize:

1) $V=IR$

2) $W=I^2 \cdot R$

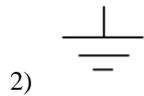
3) $R(\text{series})= R1+R2$

4) $R(\text{parallel})= (R1 \cdot R2)/(R1+R2)$

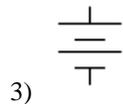
Along with the introduction to resistors, I'll present here a few basic symbols used in electronics:

1) _____

Denotes a wire or a connection.



This symbol denotes "Ground". Imagine this as the common point of all connections in a circuit.



This denotes a battery. The upper (longer) portion is the + or positive terminal of the battery. The lower portion is the - or negative terminal of the battery.



Denotes a normal bulb.

For Sale:

Model HLA 300 Amplifier ,made in Italy
solid state fan cooled.

12 volt operation 10 to 15 watts input, 300 Output.

40a power supply with it.

asking \$450 or near offer.

bought it but was told by a very senior man that i don't need it,

with my setup, he checked it and seems ok.

may be useful for portable work for someone.

available to members with genuine interest for trial

cheers jim.VK2TWY email: emad@gotalk.net.au

Wanted to buy.

**Old Victorian Railways practice morse code set,
together with (if possible) the Register.**

**These sets marked a paper tape with the the morse code
which was read and transferred to a telegraph form.**

**These sets were similar to the PMG sets, but the PMG sets
did not have the register and the operators took the
message by sound.**

Contact Bob, VK3GEB, Tel 0357623876

For Sale.

**Quansheng TG45AT Uhf FM Transceiver,
Frequency 420-450 Mhz.**

Brand New, Never Used, still in box.

Cost \$132.

Sell \$100 ONO.

Contact Bob VK3GEB, Tel 0357623876.

**Thanks to all those people at the SADARC club who have supported me with the newsletter
While I have been editor, especially Peter VK3FPSR who has done the postings etc, this is much
appreciated.**

**I will be happy to continue on as editor for the next year 2013, but if anyone has a burning
desire to do the job, Put your hand up at the AGM and the club can vote on this.**

**Unfortunately, I wont be able to attend the October meeting as I will be away on
Holiday so my apologies for that.**

I will include photos of the Hamfest in the next issue of the Newsletter if anyone sends me any!!

Regards,

Les Tatar, VK3TEX

SADARC Newsletter Editor.