Illawarra Amateur Radio Society

Propagator October 2024

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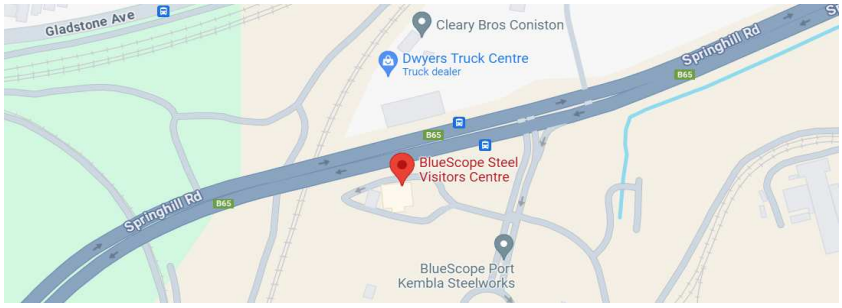
Upcoming Meeting on the 8th October 2024

The next meeting will be at the Blue Scope Steel visitors centre 7.30pm

Blue Scope Northgate entrance off Springhill Road (See website for detailed map)



VK2RUW (Knights Hill)
34.6231° S, 150.6942° E
QF55IJ

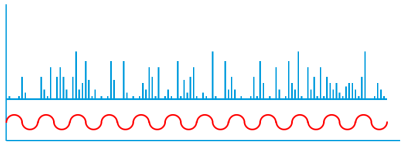
AMATEUR RADIO IN THE ILLAWARRA SINCE 1948

VK2RMP (Maddens Plains)
34°15'30.6"S 150°56'47.4"E
QF55LR

VK2AMW

Our last meeting 10th September 2024

Detecting Signals in Noise

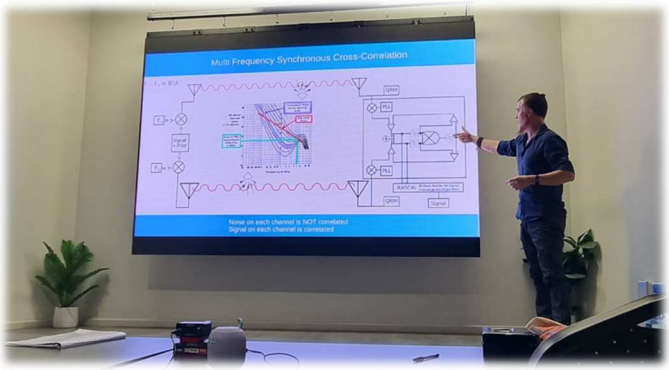


Ciaran Baranasooriya VK2ETC

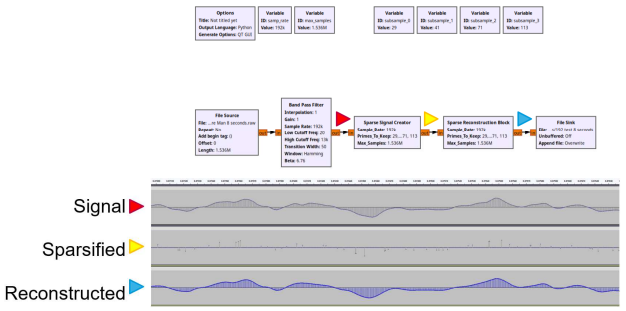
We probably had one of the most technical thought-provoking presentations we have seen in a long time.

IARS member Ciaran, VK2ETC, shared his research and development work in the quest for advancing radio technology. Ciaran's pioneering research uncovered possibilities with radio communication we never thought possible.

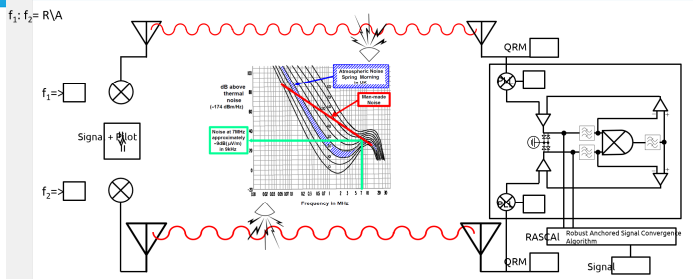
The presentation was very interesting and informative, even though it was advanced theory, the questions from the floor indicated that the audience was not completely lost in the technical magnitude of the system 😊



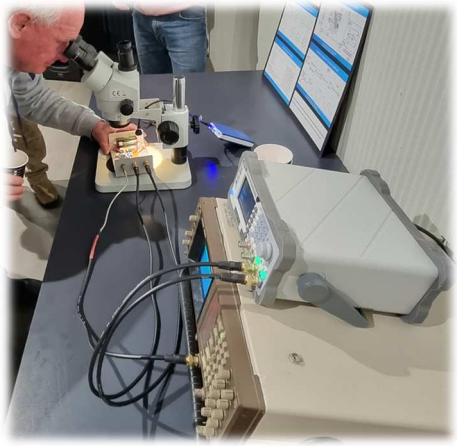
GNURadio Flowgraphs

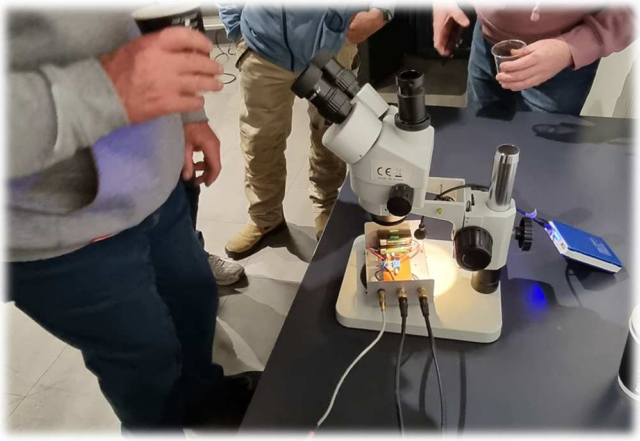


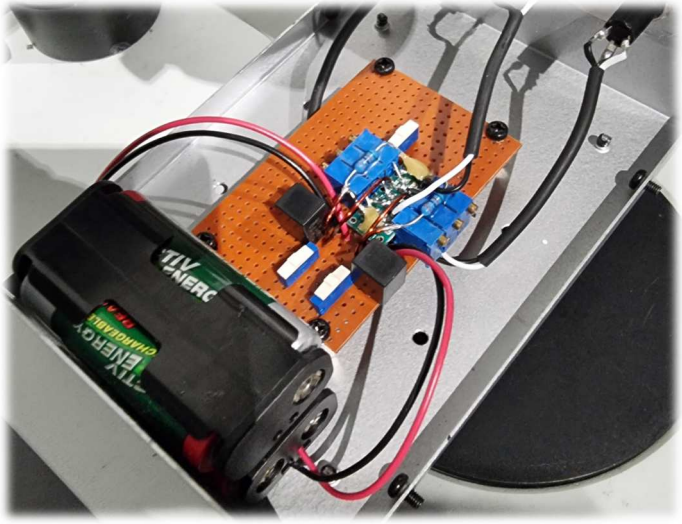
Multi Frequency Synchronous Cross-Correlation

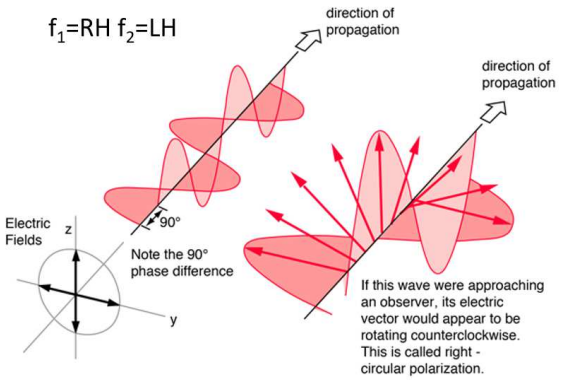


Noise on each channel is NOT correlated
Signal on each channel is correlated



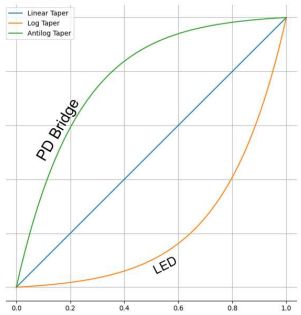


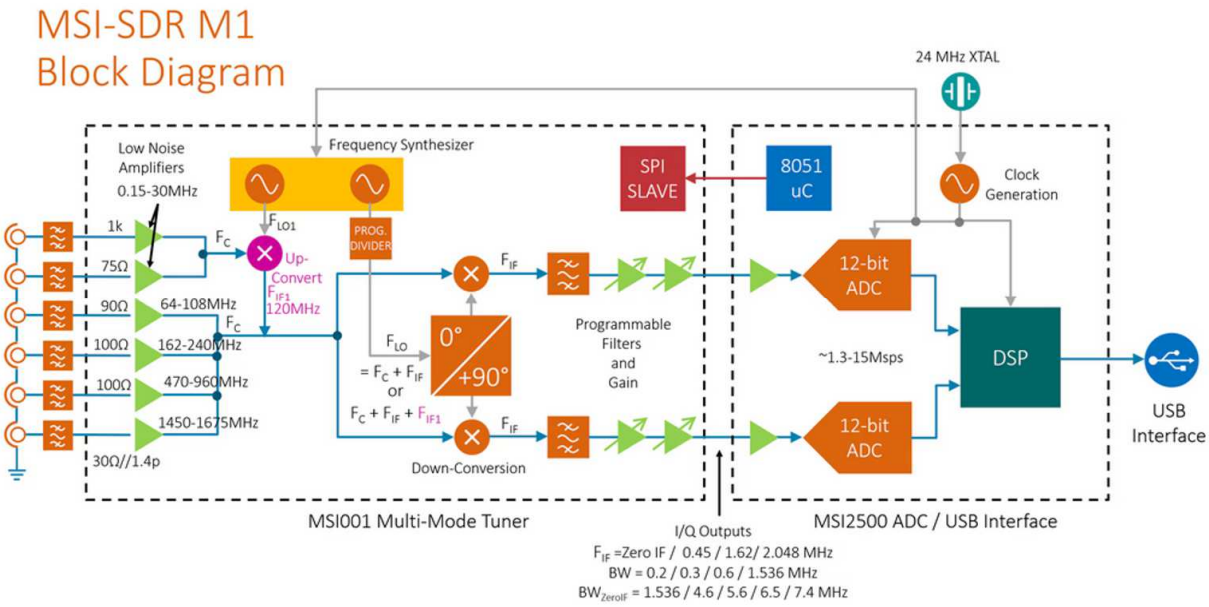




Property of Logs:

A*B=exp(log(A) + log(B))





Thanks to Ciaran for sharing his work on “Detecting Signals in the Noise” , it was most interesting.
The best part is Ciaran is more than happy to share the details of his work and has offered that anyone can contact him on his email address for more information. technologic@tuta.io
As always everyone ended up chatting about the prestation whilst having a nice cuppa and a few biscuits (those that were not watching their waistline).

We look forward to the next chapter of Ciaran’s research and development.

NEXT MEETING

SHOW & TELL

which includes a small presentation on building your own Flowerpot Antenna for 6m…. YES!

Bring along that new antenna construction or project you have been working on and share it with us. There is a computer and projector available, all you need to bring is a memory stick if you want to share any media.

Disposables Donation Table

Don't forget to bring along any old and unused items for the shack, from old valves, transistors, capacitors, resistors and anything you think someone may have a use for. So instead of it collecting dust, bring it along to the next meeting, someone will give it a new lease of life.

For $5 you can earn some good cash and all monies go to your society, win-win.

As usual see Simon VK2KU, the fella with the coloured balls and big smile

The Snowball was drawn and was won by Chairman Phil Howchin VK2CPH. Congratulations to Phil, $45.00 in the pocket for a $5 investment, not bad 😊

Make sure you are present and have a valid ticket to win some cash.

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Silent Key

It is with sadness that we advise the passing of IARS member Syd Brooksby VK2FACG on the 26th July 2024, we have not seen Syd at the meetings for a while and have only been recently notified of his passing. Syd was a regular at the IARS meetings and always gave IARS member Max VK2ARZ a lift down from Sydney for our monthly meetings. We offer our condolences to his family and friends.

Vale Syd Brooksby VK2FACG

Licensing and upgrades?

The IARS **can help** with obtaining your Foundation, upgrading to Standard or Advanced from *the comfort of your own home,* and its FREE!!! *

We have approved **ACMA** accessors that can offer remote or face to face assessments for the **ACMA**

Please contact Keith VK2KQB at iars.keithb@gmail.com for further information on training and assessments.

Your society supports further learning, please find out more on how we can help you.

Dennis has a new bright shining call sign VK2VCC, we welcome Dennis to the airwaves

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TUNE IN to the IARS NETS

Echo-link

Note Time changes on two of the nets ***

1. **Our main net on Saturday Morning, the EAST COAST NET hosted by Steve VK2BGL at 9.30am**

You are invited to join Steve every **Saturday at 9.30am** on our **146.850MHz** repeater (linked to 146.675MHz) or **VK2BGL-R** on Echo-link for a very enjoyable morning of general discussions from amateurs who log in from all over the world. This NET is linked to multiple repeater systems including VK2RFS south coast.
Join Steve and everyone for a very enjoyable 2 hours on Saturday morning.

The IARS would also like to thank Doug VK2XLJ, who is always willing to assist whilst Steve is away.
(Also, a special thank you to Angelo, VK2NWT who assists when either Steve or Doug is unavailable)
Lots of backup here 😊

2. **IARS Tuesday evening weekly 80m NET on 3.666MHz at 8.30pm hosted by Mal VK2DXM using VK2AMW.**
   Every Tuesday evening, (expect the second Tuesday of the month) for a great get together on 80m. Signal reports, news and general discussions are the agenda. Normally runs for around 60minutes.

3. **IARS Wednesday evening weekly 6m NET *** new time is at 8PM on 53.650Mhz with a – 1Mhz offset Hosted by Geri VK2UTE or Simon VK2XQX, (123Hz CTCS tone enabled due to interference) Maddens plains 6m Repeater**
   General discussions about building antennas for 6m, transceivers and what else comes to mind, this net is normally between 30 and 60minutes.

4. **IARS Thursday evening weekly 10m NET *** new time is at 8PM on 28.466Mhz +/- for QRM/QRN Hosted by Tony VK2TS**
   General discussions about building antennas for 10m, transceivers and what else comes to mind, this net is normally between 30 and 60minutes.

IARS REPEATERS

VK2RUW (Knights Hill) **VK2RMP (Maddens Plains)**

146.675 MHZ >>>>> *linked* <<<<< 146.850 MHZ

Current Repeater STATUS

- **438.225 with a - 5MHz offset. OK**
- **146.975 with a -600kHz offset NO CTCSS, C4FM enabled OFF AIR ****
- **146.850 with a – 600kHz offset (linked to 146.675) NO CTCSS OK**
- **146.675 with a – 600kHz offset (linked to 146.850) NO CTCSS OK**
- **53.650Mhz with a – 1Mhz offset (123Hz CTCSS tone enabled due to interference) -OK**
- **438.725Mhz with a -5mHZ offset DMR only, OK**
- **1296.850Mhz Experimental Beacon with simplex repeater function, located Maddens Plains – OK**
- **Echo-link VK2MT-R via 146.850MHz also linked to 146.675MHz and VK2BGL-L – OK**

Repeater Report September 2024:

It has been a very interesting few weeks where, from not visiting the repeater sites in 18 months to going there almost every week. This month we had the winds take down power lines feeding Maddens Plains, the repeaters were off for 4 days. All transceivers placed back on air on the 31st August with a couple of issues that needed further attention. The DMR battery system fell below the accepted recharge threshold and required a quick reached in the workshop before reinstalling. The 23cm Parrot required a frequency re-program due to the brown out which was caused by the extended battery discharge. (Will need to install a BOD in the 23cm programmable IF unit)

** The sad news about **146.975** is that we are most likely have an intermittent antenna fault. This has kept the DR1X Yaesu repeater off air, we are currently getting the antenna replaced and will advise when its "BACK ON AIR", Thank you for your patience.

We are still experiencing some intermods on **438.225MHz** repeater, this has been an ongoing issue for the society for a couple of years now due to a LIPD device in close proximity we have yet to track down. What makes it difficult is that this LIPD is very unpredictable and therefore difficult to find as it means a trip up to the tower with test gear every time it occurs, we will do our best to solve the problem soon with the last resort a CTCSS decoder will be installed. We have avoided using CTCSS because there are still users that do not have encoders on their older rigs.

The IARS welcomes any feedback on our repeater systems.

Please send all your feedback to iars.keithb@gmail.com and it will be passed on to our repeater team.

Any donations to help us maintain our great repeater system will be greatly appreciated. Please check our banking details on our website at www.iars.org.au under the Contact details page. As reference of the donation please add your Call sign and the words "Repeater Donation"

If the repeaters are silent, why not just give out a call, who knows who may be on the other end of the tower.

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

LOOKING FOR SOMETHING to SWAP, BUY, SELL, an OLD PART

Parts you may need for repairs or some radio gear you no longer need that could go to a new home……….?

Email iars.keithb@gmail.com

IARS member Mal VK2DXM shared a very interesting product with the society at the last meeting and thought it would be good to share this with everyone who wasn't present, or those that forgot about it 😉 Portable Programmable Soldering Station T12 at a great price that matches the performance.

It heats up in a Jiffy and the variety of tips (HAKKO Quality) that are available makes this little addition to your tool box a must.

The best part is that you can order a boot to suit the type of battery pack you are going to use.
There are so many websites selling this product that we could not fit in all the addresses,

Just type in T12 soldering station and the list will pop up!

If you would like to know more about the T12 soldering station please send an email to Mal vk2dxm@gmail.com or iars.keithb@gmail.com

Electronic component and service suppliers

Need a quick PCB in a hurry to put that latest project on, JLCPCB

https://jlcpcb.com

https://au.element14.com

https://au.rs-online.com/web/

https://au.mouser.com

https://www.digikey.com.au

https://www.minikits.com.au

https://core-electronics.com.au

https://www.wagneronline.com.au

https://littlebirdelectronics.com.au

ATR
Amateur Transreceiver Radio Supplies

https://amateurradiosupplies.com.au

https://www.elitecommunications.com.au/mobile-communications-category/communication-equipment/amateur-radio/amateur-radio-accessories/

YAESU Sales and repairs https://www.vkradio.com.au

https://dxing.com.au

https://www.telcoantennas.com.au

https://www.altronics.com.au

https://www.jaycar.com.au

If you know of a good supplier of electronic stuff or services 😊, please share it with us so we can all benefit.

Send information to iars.keithb@gmail.com and we will publish it in the next propagator.

got an idea

Tech corner

Share it with us, this could be suggestions, technical ideas, circuit diagrams, IARS community projects, pictures of your latest shack project, in fact ANYTHING of interest

Let us know by return email iars.keithb@gmail.com

If you have some IARS related pictures or information that we can put on the IARS website, please let us know and we can get that happening.

QRP mobile?

Power from body heat?

Recently an article came across my desk about the research currently been done on the use of our body heat to power small electronic devices, my basic instinct went “Can we use it for AMATEUR RADIO?” 😊 , small steps in the research at the moment but you never know, maybe just maybe!

Wearable device uses body heat to power an LED

By Kiyomi Taguchi and Sarah McQuate, University of Washington

One of the drawbacks of fitness trackers and other wearable devices is that their batteries eventually run out of juice. But what if in the future, wearable technology could use body heat to power itself?

UW researchers have developed a flexible, durable electronic prototype that can harvest energy from body heat and turn it into electricity that can be used to power small electronics, such as batteries, sensors or LEDs. This device is also resilient — it still functions even after being pierced several times and then stretched 2000 times.

The team detailed these prototypes in a paper in Advanced Materials.

“I had this vision a long time ago,” said senior author Mohammad Malakooti, UW assistant professor of mechanical engineering. “When you put this device on your skin, it uses your body heat to directly power an LED. As soon as you put the device on, the LED lights up. This wasn’t possible before.”

Traditionally, devices that use heat to generate electricity are rigid and brittle, but Malakooti and team previously created one that is highly flexible and soft so that it can conform to the shape of someone’s arm.

This device was designed from scratch. The researchers started with simulations to determine the best combination of materials and device structures and then created almost all the components in the lab.

It has three main layers. At the centre are rigid thermoelectric semiconductors that do the work of converting heat to electricity. These semiconductors are surrounded by 3D-printed composites with low thermal conductivity, which enhances energy conversion and reduces the device’s weight. To provide stretchability, conductivity and electrical self-healing, the semiconductors are connected with printed liquid metal traces.

Additionally, liquid metal droplets are embedded in the outer layers to improve heat transfer to the semiconductors and maintain flexibility because the metal remains liquid at room temperature. Everything except the semiconductors was designed and developed in Malakooti’s lab.

In addition to wearables, these devices could be useful in other applications, Malakooti said. One idea involves using these devices with electronics that get hot.

“You can imagine sticking these onto warm electronics and using that excess heat to power small sensors,” Malakooti said. “This could be especially helpful in data centres, where servers and computing equipment consume substantial electricity and generate heat, requiring even more electricity to keep them cool. Our devices can capture that heat and repurpose it to power temperature and humidity sensors.

This approach is more sustainable because it creates a standalone system that monitors conditions while reducing overall energy consumption. Plus, there’s no need to worry about maintenance, changing batteries or adding new wiring.”

These devices also work in reverse, in that adding electricity allows them to heat or cool surfaces, which opens up another avenue for applications.

“We’re hoping someday to add this technology to virtual reality systems and other wearable accessories to create hot and cold sensations on the skin or enhance overall comfort,” Malakooti said. “But we’re not there yet. For now, we’re starting with wearables that are efficient, durable and provide temperature feedback.”

Video link for more information. https://www.youtube.com/watch?v=uNGNP5EXNWs&t=6s

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HIGH SWR Protection for Remote Equipment

Keith VK2KQB

Most transmitting equipment has its own protection system which will fold back the current if the SWR goes too high for some reason.

However, some equipment does not have this kind of protection and high SWR can damage the output transistors or devices due to excessive currents or voltages created by BAD SWR. The old myths about RF coming back into your finals and destroying them is not entirely true or false, it’s not the RF itself that causes harm but rather the energy that gets converted into either high current or high voltage, depending on the impedance this energy is presented with.

If we are having a QSO and we see the needle of the trusty old SWR meter getting excited, we normally shut down the transmission immediately and begin our investigation into the cause to avoid costly damage to our equipment.

The problem is what do you do if the equipment is remotely situated, and you have no means of checking the SWR while its transmitting. If the equipment had sufficient protection, then no worries, it would take care of itself.

However, if it didn't you may have to look at alternate methods of protection.

You can go the route of Circulators, these handy devices operate like one-way valves and any returning RF energy gets routed to an external dummy load and dumped there instead of creating high voltages across the finals. The problem with circulators is that they are rare for Amateur radio frequencies and mostly available from old commercial sites, even if the frequency is close they are not that easy to adjust down to the AR bands. The other problem is that they are not linear devices and will create intermod frequencies which will have the ACMA knocking at your door quicker than a blink of an eye, especially if your equipment is on a commercial site and you wipe out the local ambulance service.

Picture : Single port Circulator

The solution for the intermod is a High Q low pass filter on the circulator output, which is an added cost and most likely a space hungry cavity type filter, maybe not the best option…… (we covered cavities in a previous propagator). So what do we do if we have a situation of bad SWR when no one is home?

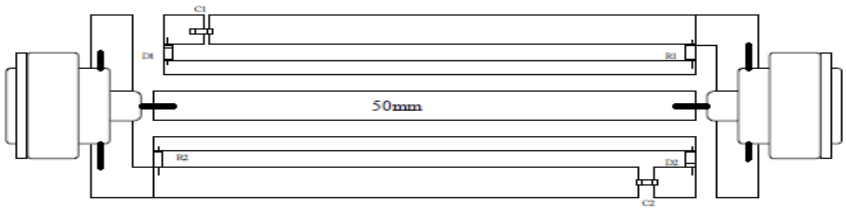
The IARS recently had an issue where we were losing transceivers due to intermittent SWR on one of our repeater sites. Due to the nature of the antenna system and location, it would be a while before we could get up towers and investigate, we were also not 100% sure it was a faulty antenna, we also could not spend hundreds of dollars replacing final stages of the repeaters every time we had an issue.

Without getting expensive circulators and cavities installed or modifying the electronics of the actual equipment itself, the only other low-cost practical solution was to build a practical, low cost, effective HIGH SWR protection circuit external from the TX equipment. Pinching the idea off an SWR bridge, a power interrupter circuit was designed to switch off the transmitter should the SWR reach destructive levels.

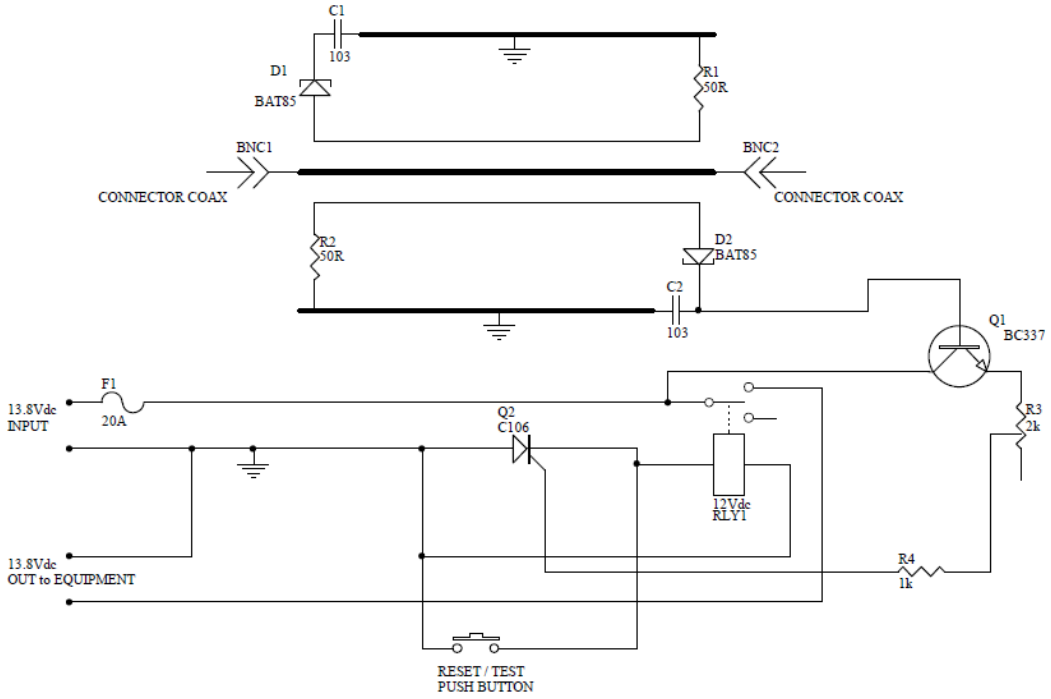
The new unit was installed on site with a recently repaired repeater.

I thought it may be a good idea to share this project with IARS members.

All parts needed was spare piece of PCB, couple of Hi Speed LFVD diodes like the BAT85, resistors, capacitors a transistor, relay and SCR, stuff you find in your junk box in the shack.



Drawing of the unit showing BNC connectors on each end of the PCB (didn't exactly end up looking like this 😊)

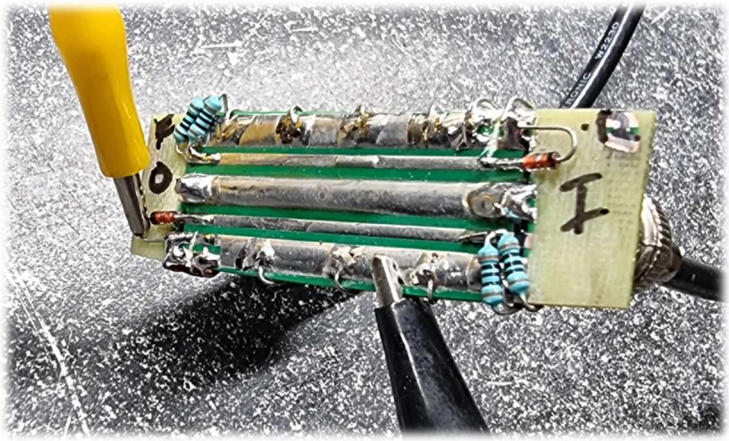


The unit works by supplying the equipment via a Normally closed relay. The sensor is basically a SWR bridge, the board can made in the workshop or, there are many low-cost VHF and UHF SWR bridge PCB's on Ebay, if you don't want the effort of making a PCB up yourself 😊

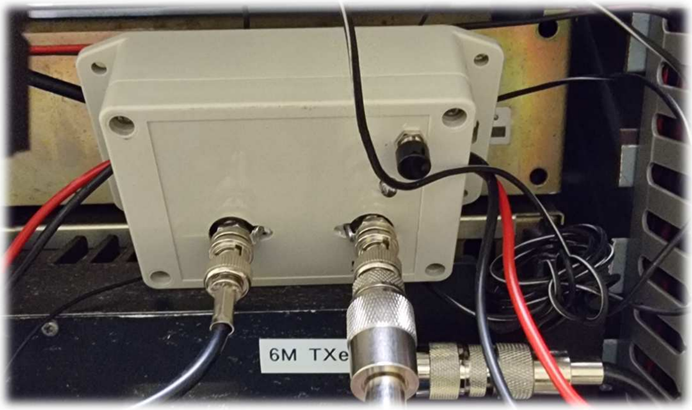
When the SWR exceeds a safe level, the voltage buffered by Q1 is fed into a variable resistor and in turn drives the gate of a low power SCR. The SCR will trigger and latch the relay removing DC power from the equipment, resetting can be either achieved by powering down, push button across the SCR or some other electronics to reset the unit.

The unit was installed on site and safely disconnected the DR1X after a day of use. This also affirmed that the SWR problem was very intermittent and sparse.

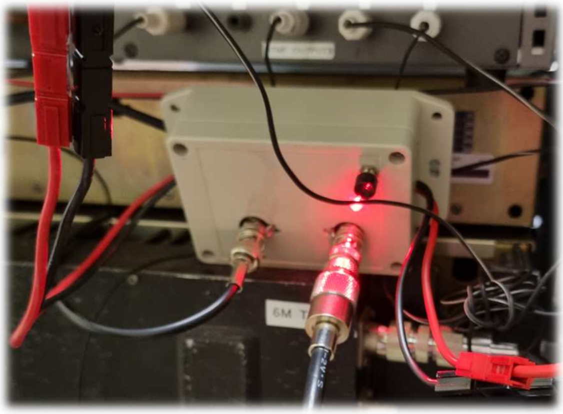
The repeater turned off, but at least saved our transceiver from damage, AGAIN!



Prototype testing on the test bench before going on site



Freshly installed on site ready to go



24 hours later , tripped and equipment saved

Simple, low cost and about 1 hour to build, for more information please contect Keith at iars.keithb@gmail.com

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Does a Dipole Need a Balun?

Whether a dipole needs a balun is a contested question in the world of amateur radio, with some stating that, yes, a dipole absolutely requires a balun, and others claiming that it's an unnecessary accessory. The truth is that both sides of this argument are correct in their own way.

To help clarify what we mean, we're going to take you through everything you need to know about the necessity of a balun with your dipole. By the end, you'll know for sure if it's something you need to invest in or not. Let's get into it.

What Is a Balun?

A balun is a device that uses voltage currents to create balanced lines between your antenna system and your cable system. They're usually used alongside antenna systems to ensure electricity can run smoothly from ground to device.

There are two key reasons why you may use a balun as part of your amateur radio setup. The first is to organise the flow of A/C signals for optimal performance. The second is to facilitate the impedance transformations between the balanced loads and coaxial cable.

There are **two distinct categories** that baluns fall into: voltage baluns and current baluns.

Voltage baluns work by continuously attempting to force the output terminals to equal voltages. Current baluns, on the other hand, allow each output terminal to adjust its voltage to any value necessary rather than forcing them to be equal. These are now the most commonly used in the electric industry.

Unless you have a specific purpose in mind for your dipole, you should avoid using a voltage balun; they can cause significant damage to your entire system if you aren't careful and often aren't as effective as current baluns. Understanding the differences is key before making a final decision.

So, now that you're clued up on what a balun is and what it does, it's time to consider whether you need to add one to your setup.

Is a Balun Necessary on a Dipole?

Strictly speaking, a balun isn't necessary on a dipole – your antenna can function perfectly fine without one. However, a balun on a dipole is helpful for providing a smoother transition between a balanced antenna and an unbalanced feed line. They can also help to transform impedance for a superior performance overall.

So, in short, are baluns **essential**? No, but they definitely possess some benefits.

A more pressing question to ask is *why* you want to use a balun with your dipole in the first place, as this will help inform what kind you should go for. Beyond balancing and transforming impedance, baluns can also be used to provide some isolation to your audio, improving its clarity.

Different baluns prioritise different abilities for your dipole. Knowing the differences is essential before committing to a purchase. So, with that in mind, let's look into the benefits in a little more detail.

What Are the Benefits of Using a Balun With a Dipole?

The primary benefit of using a balun with a dipole, as we've already mentioned, is to balance the transmission line, which is actually where balun gets its name from – it's a combination of *bal*anced and *un*balanced.

Without a balun, the connections you use between a dipole antenna and other coaxial feeders are prone to significant problems, and this balancing effect acts to solve those potential issues.

Additionally, baluns can help minimise frequency interference. Electrical systems are everywhere, meaning the likelihood of your antenna picking up frequencies that you aren't interested in is high.

If you use your dipole without a balun, you're effectively leaving your device wide open to interference from external, unwanted electronic forces, which can significantly hamper your radio's performance.

Final Thoughts

There are certainly many benefits to adding a balun to your dipole, but does that make it an absolute requirement? No.

Ultimately, it's down to you whether you feel the need to add this component to your existing amateur radio setup.

Your radio and antenna can function without a balun, but it may not function as well as it could *with* one.

Next month we will cover "Voltage or Current" , which way does your balun swing?

If you have anything interesting to share with us, please send to
iars.keithb@gmail.com

Handy On Line Calculators

Send us your favourite handy calculator link so we can post it here!

NEW >>>> Real HANDY COAX LOSS Calculator https://kv5r.com/ham-radio/coax-loss-calculator/

Impedance ….. https://www.omnicalculator.com/physics/rlc-impedance

Wavelength …. https://www.omnicalculator.com/physics/wavelength

PI attenuator values …… https://www.omnicalculator.com/other/pi-attenuator

Xc …… https://www.omnicalculator.com/physics/capacitive-reactance

XL …… https://www.omnicalculator.com/physics/inductive-reactance

Cut Off ….. https://www.omnicalculator.com/physics/cutoff-frequency

VSWR …… https://www.omnicalculator.com/physics/vswr-voltage-standing-wave-ratio

LM317 Regulator resistor selector ….. https://www.omnicalculator.com/other/lm317

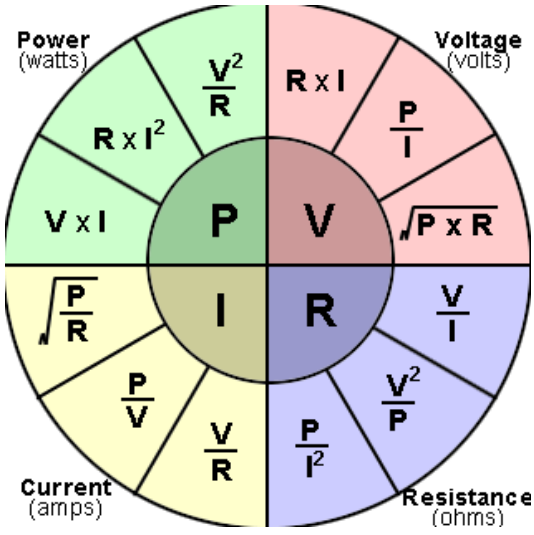
Resistor Colour code calculator….. https://www.digikey.com.au/en/resources/conversion-calculators/conversion-calculator-resistor-color-code

Resistor Heat rise ……. https://calculator.academy/resistor-heat-calculator/

Volt Drop Calculator AC and DC …….. https://www.rapidtables.com/calc/wire/voltage-drop-calculator.html

Helix antenna calculator ……. https://sgcderek.github.io/tools/helix-calc.html

Parabolic dish calculator ……. https://www.everythingrf.com/rf-calculators/parabolic-reflector-antenna-gain



How many of these can you still answer correctly?

Question 1.

The time constant of a 500 microhenry inductor and a 50-ohm resistance is:

(a) 0.2 microsecond
(b) 5 microseconds
(c) 10 microseconds
(d) 125 microseconds

Question 2.

The peak value of an alternating current can be calculated by:

(a) multiplying the rms value by 1.414
(b) multiplying the rms value by the instantaneous value
(c) multiplying the rms value by 0.707
(d) dividing the rms value by the instantaneous value

Question 3.

The frequency of an electromagnetic wave if one complete cycle of emission is completed in 10 microseconds is:

(a) 100 kHz
(b) 200 kHz
(c) 225 kHz
(d) 300 kHz

Question 4.

The transmission from a 100-watt output transmitter contains a harmonic at -60 dB. The power of the harmonic signal component is:

(a) 10 milliwatts
(b) 10 microwatts
(c) 0.1 watt
(d) 0.1 milliwatt

Question 5.

When either L or C is increased, the resonant frequency of an "LC" circuit:

(a) increases
(b) decreases
(c) remains the same
(d) is determined by the shunt resistance

Question 6.

In a series LC circuit at resonance the:

(a) current is minimum
(b) voltage across C is minimum
(c) impedance is maximum
(d) current is maximum

Answers next month ☺

Answers to last month's questions … (Q1 = A; Q2 = D ; Q3 = D ; Q4 = D ; Q5 = C ; Q6 = B)

How well did you do, will you still pass the Amateur Radio test?

Send your answers to iars.keithb@gmail.com to go into the draw for a prize at the end of the year

THE PROPAGATOR

NO. 9/76 SEPTEMBER 1976 NO. 9/76

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NOTICE OF MONTHLY MEETING SEPTEMBER 1976.

Members are advised that the monthly meeting of the Illawarra Amateur Radio Society will be held at the Wollongong Town Hall Meeting Room on Monday, 13th September 1976, at 7.30 p.m.

AGENDA.

1. Apologies and welcome to visitors.
2. Minutes of previous General Meeting.
3. Correspondence.
4. Financial report.
5. General Business.
6. Film

Film. "Computer Graphic Display", from IBM.

This film shows the uses of a visual display unit for such purposes as 3D designing and printed circuit designing. We had this film for the July meeting, but unfortunately the copy was damaged, however, Keith has tracked down another copy and we hope all will be well for this meeting.

Raffle prize will be a 6 function calculator.

Moonbounce Report - September 1976.

We were advised by K3JJZ of the W3CCX group, which had operated portable 432MHz EME in Columbia Sth. America, in July-August that they had experienced a number of power failures during the scheduled test periods. Unfortunately one of these had occurred during the scheduled test with VK2AMW. They were successful in working a number of other stations, some of whom made 432MHz WAC with their contact with HK1TL.

Our scheduled tests for August were carried out on 29/8. A transmitter power supply problem prevented contacts during the 'W' test period in the morning but VK2ZLN heard W4ZXI,'M' copy, while VK2ALU worked on the power supply.(including removal of a mouses nest)

During the evening, a further group of tests were scheduled with stations in Europe. SM5LE was not heard and was probably not on. Signals were heard during the F2TU test period, but bad QRM from another French station, who was peaking to 10dB over noise, prevented copy. The moon set prior to the scheduled test period with LX1DB due to an error in scheduling by the hardworking ham who provides the worldwide test schedules each month.

A check was made on 29/8 for received signal strength of emanations from the concentrated star mass at the centre of the Galaxy. This is a good reference signal level, as it is not subject to the same fluctuations in level as the emanations from the Sun and is also more comparable in strength to the lower level EME signals received from some stations.

A QSL card was received during the month from SM5LE for our first Australia - Sweden 432MHz contact, made on 30/7/76.

Lyle VK2ALU.

A PRACTICAL HINT.

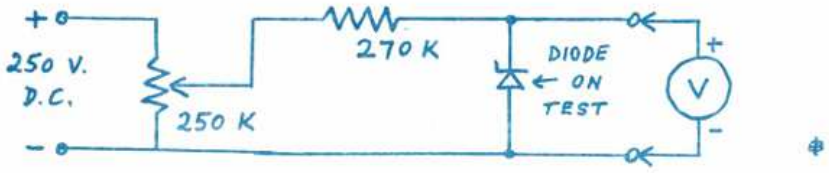
From "A.P.C.", newsletter of Moorabbin & District Radio Club.

TESTING UNKNOWN ZENER DIODES.

The diagram shows a simple method for determining the zener point of unknown zener diodes. All that is needed is a sensitive voltmeter and a few small parts. The 250k linear pot. is used as a voltage divider and the 270k fixed resistor is used as a current limiter.

The diode is placed in circuit with the cathode to the positive side of the supply. The voltage is adjusted upwards (with the pot.) until the meter shows no further increase in voltage; the indicated voltage on the meter is then the zener breakdown voltage of the device under test.

If the meter reads zero, the zener diode is short circuit and if the meter reads the supply voltage, the diode is open circuit.



Will share more oldies next month.

To read more information about this old propagator and others, use the link below

https://www.iars.org.au/wp-content/uploads/2020/09/1976-09-September.pdf

Upcoming Contests ……

Oceania DX Contest

Oceania DX (OCDX) Contest

Contest Manager

The Oceania DX (OCDX) Contest is managed by the Oceania DX Contest Committee.

Contact email is **info@oceaniadxcontest.com**

Contest Introduction

The OCDX contest is Oceania's only international style contest where contacts with stations all over the globe are able to participate.

Oceania stations may contact any station for QSO points whilst non-Oceania stations are required to contact any station in Oceania for QSO points.

The contest runs over the first two full weekends in October and has SSB, CW and SWL categories. Go to the contest web site for more information.

Contest Dates/Times:

PH - The first full weekend in October each year from 0600 UTC Saturday to 0600 UTC Sunday

CW - The second full weekend in October each year from 0600 UTC Saturday to 0600 UTC Sunday

Log deadline for PH and CW logs - 31 October.

More info here >>>>>>> https://www.wia.org.au/members/contests/oceania/

23cm Fun day on the 23rd of EVERY MONTH !!

If you are interested in 23cm or higher communications, the local IARS members are getting together with the MSCARC members on the 23rd of every month to have a fun day around the Illawarra area.

The SHF team are even looking at 13cm fun day on the 13th of every month, for more information please contact the SHF organiser Rob Heyer VK2XIC at **vk2xic@gmail.com**

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AR NEWS

ACMA's New fees and reminder to reassign or reconfirm call signs

Date : 03 / 09 / 2024
Author : ACMA

3 September 2024

New fees, reminder to reassign or reconfirm call signs

New amateur radio fees:
From 1 September 2024, we will introduce new fees for the following call sign activities:
• Reassigning a:
o special event call sign: $34.00
o VK0 and VK9 call sign: $34.00
o contest call sign: $15.00
• Transferring a call sign to another amateur operator: $15.00

For more info click here >> https://www.wia.org.au/newsevents/news/2024/20240903-1/index.php

ARNSW Balun (and more) Buildathon

On Sunday the 13th of October, ARNSW members are invited to our next Buildathon - 'Baluns and more'

Like previous Balun days, kits are available to make either a 1:1 or 4:1 balun.

But... what if you need something to connect to your balun?

Well, we also have Kevlar-cored copper wire available, suitable for dipoles and many other kinds of wire antenna. Its lighter than solid copper wire and stronger, too.

An introductory technical presentation will provide an overview of balun principles, balun kit assembly and some information on dipole antennas, to assist in construction and use of your balun or antenna.

Participants are requested to bring their own hand tools and soldering stations if they have them – although a small number will be available for shared use.

We also have facilities to test your balun and antenna before leaving on the day.

Catered lunch will be provided, subject to sufficient registrations.

Balun kits are $20 each, and Kevlar core wire is $0.50/metre, supplied on a spool. Balun kits and wire must be pre-orders, but you can pay and collect on the day.

Registrations are preferred by email, to events@arnsw.org.au. Note that we cannot admit walk-ins on the day.

73

Al VK2OK

Event Co-ordinator for ARNSW.

Joint Picnic 19th October

Fitzroy Falls Reservoir picnic area

PICNIC & FOX HUNT

TIME : From 09H30 till whenever

RSVP MSCARC

David VK2LDW

mscarcinc@gmail.com

RSVP IARS

Keith VK2KQB

secretary@iars.org.au

Free sausage sizzle and drinks for club members and family, $5 for non-members

Please RSVP before the 10th October 2024

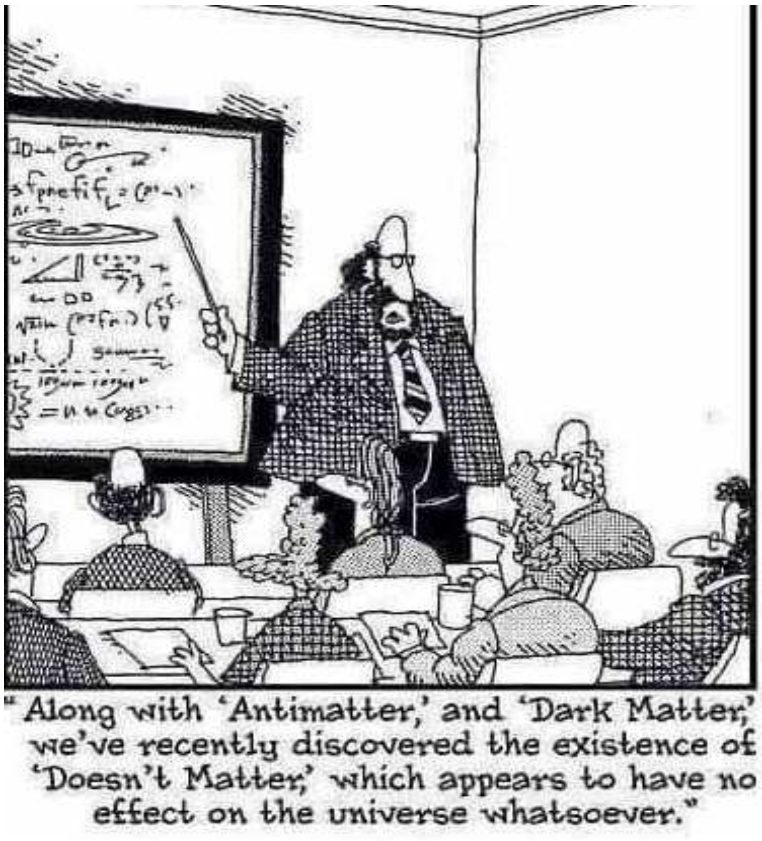
Upcoming meeting presentations ……

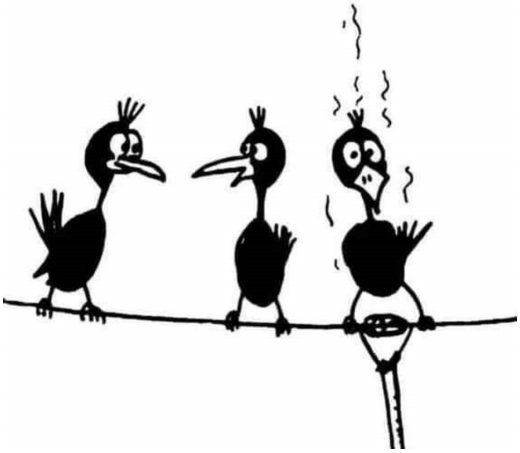
- **October 2024** : **Show and Tell ,** Bring along that new antenna construction or project you have been working on and share it with us. There is a computer and projector available, all you need to bring is a memory stick if you want to share any media. We will be also presenting the 6m Flowerpot kit the IARS is putting together for anyone interested.
- **November 2024** : **IARS Annual Auction (**Simon VK2XQX) The Famous IARS Annual Auction is Around the corner, this is always a great opportunity to pick up that bargain or sell that dust collecting item no longer required.
- **December 2024** : **Pizza Dinner** The annual IARS end of year celebration.

Fun Corner

Please send in your funnies to iars.keithb@gmail.com

Thanks to all that sent in funnies.





The **IARS needs YOUR input and support,** any technical items, amateur radio news, any projects you would like to share, in fact any AR related goings on are welcomed.
Feedback is also very important for us as it helps maintain a good read, if you would like to see more of something, or would like to see a subject added. Please let us know iars.keithb@gmail.com

That's all for now, hopefully catch you all at the
Blue Scope visitors centre on the 8th of October 7.30pm

73
Keith VK2KQB
IARS Secretary

IARS, Amateur Radio in the Illawarra since 1948