Illawarra Amateur Radio Society

Propagator March 2023

Upcoming Meeting on the 14th March 2023

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)

THE IARS FOLLOWS A COVID19 SAFE PLAN

AMATEUR RADIO IN THE ILLAWARRA SINCE 1948

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

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

VK2AMW

This year is our 75th aniversary

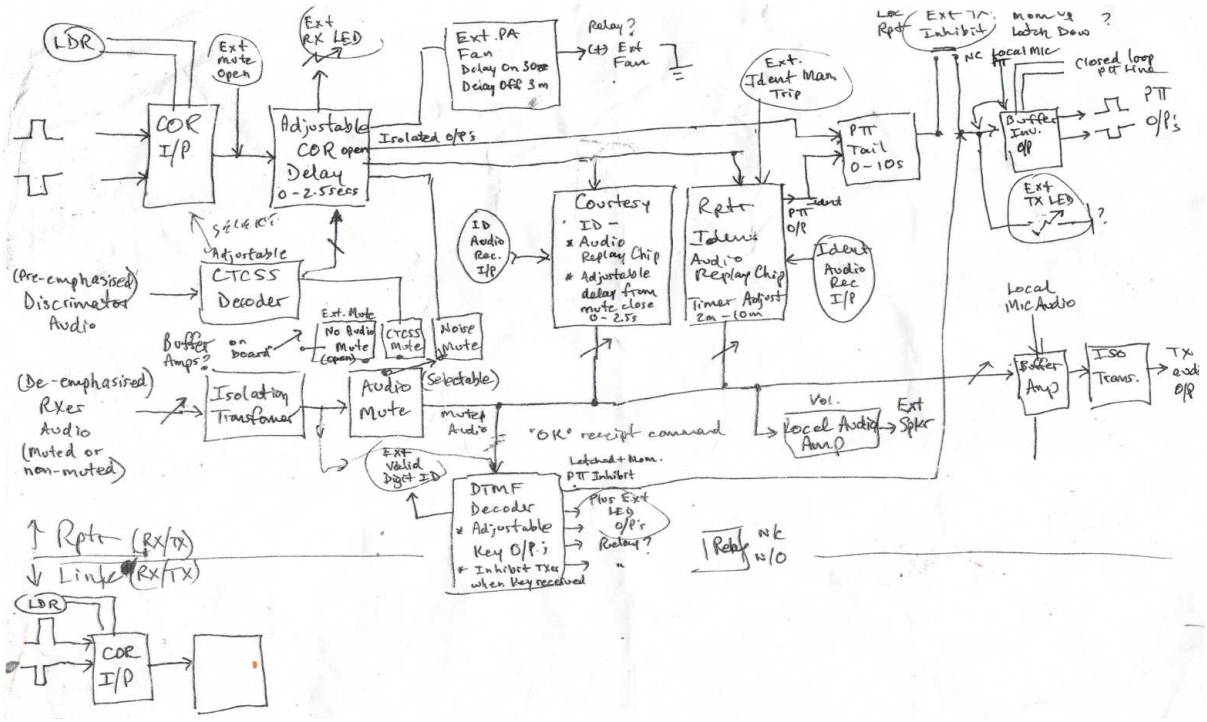
Our last meeting 14th February 2023

First for 2023

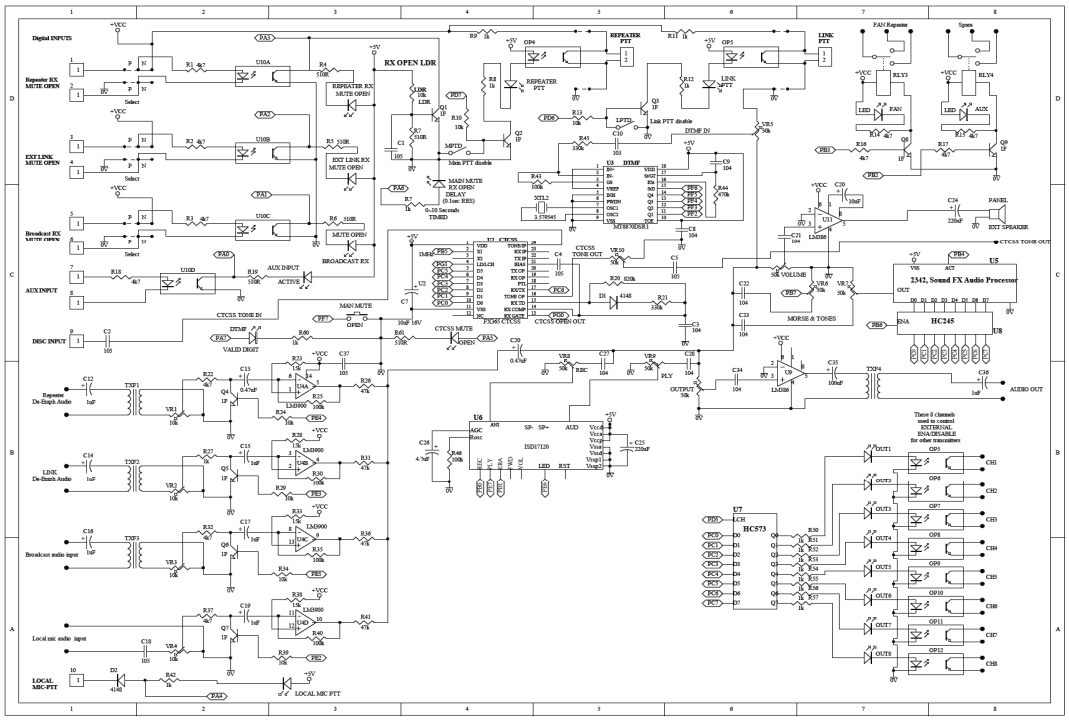
Although it was Valentine's Day, there were plenty of members that attended the evening.

The presentation went very well with Keith VK2KQB showing decades of repeater control design amalgamating into todays technology where everything is smaller and compact.

From the ENCODED concept art files of Rob VK2MT

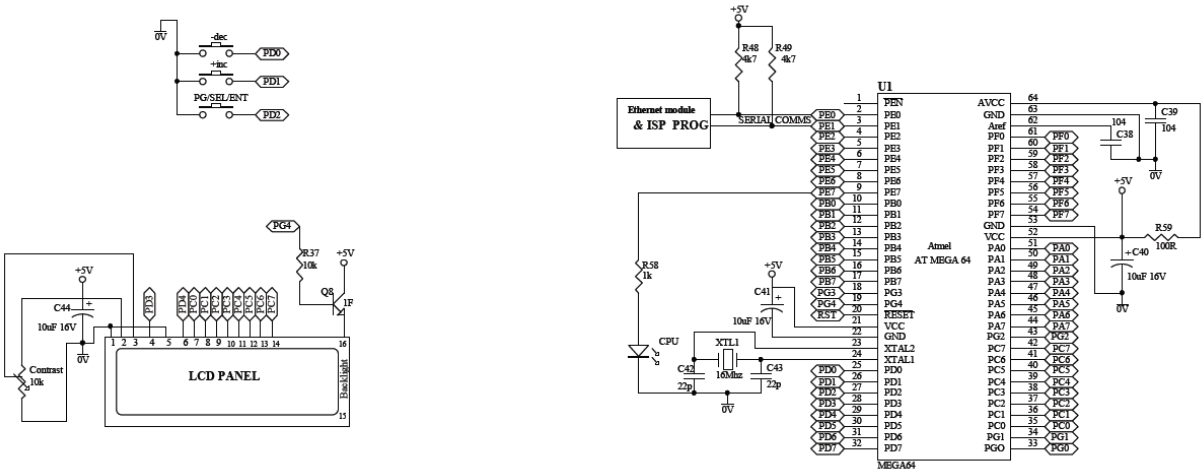


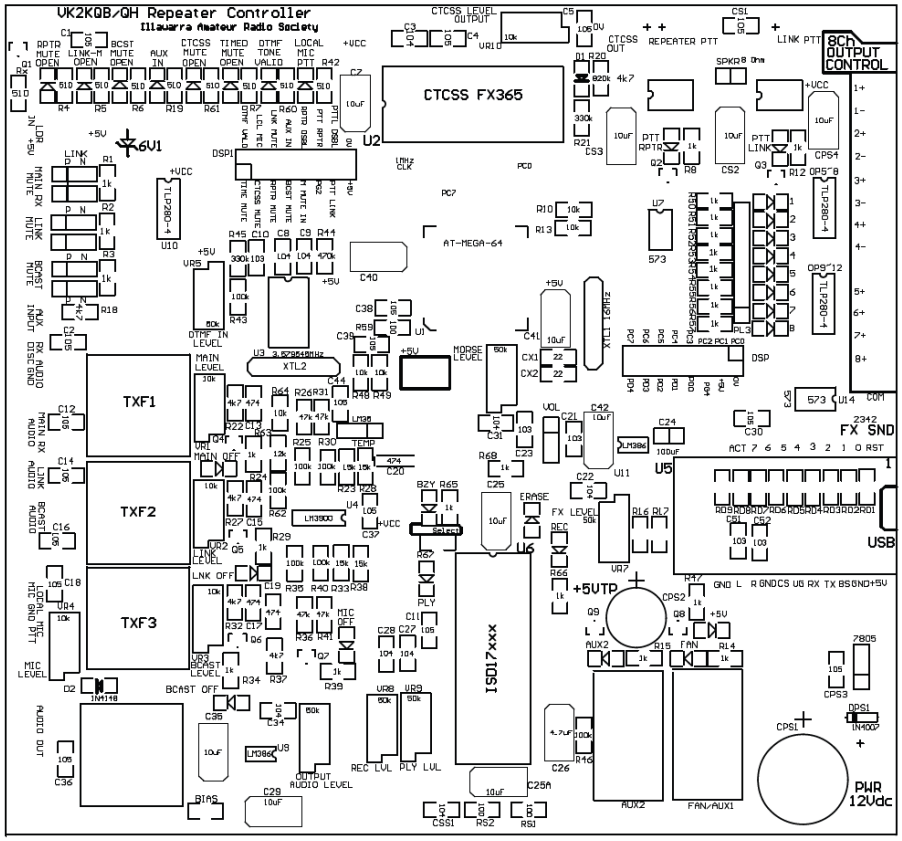
To the Decoded version with parts 😊



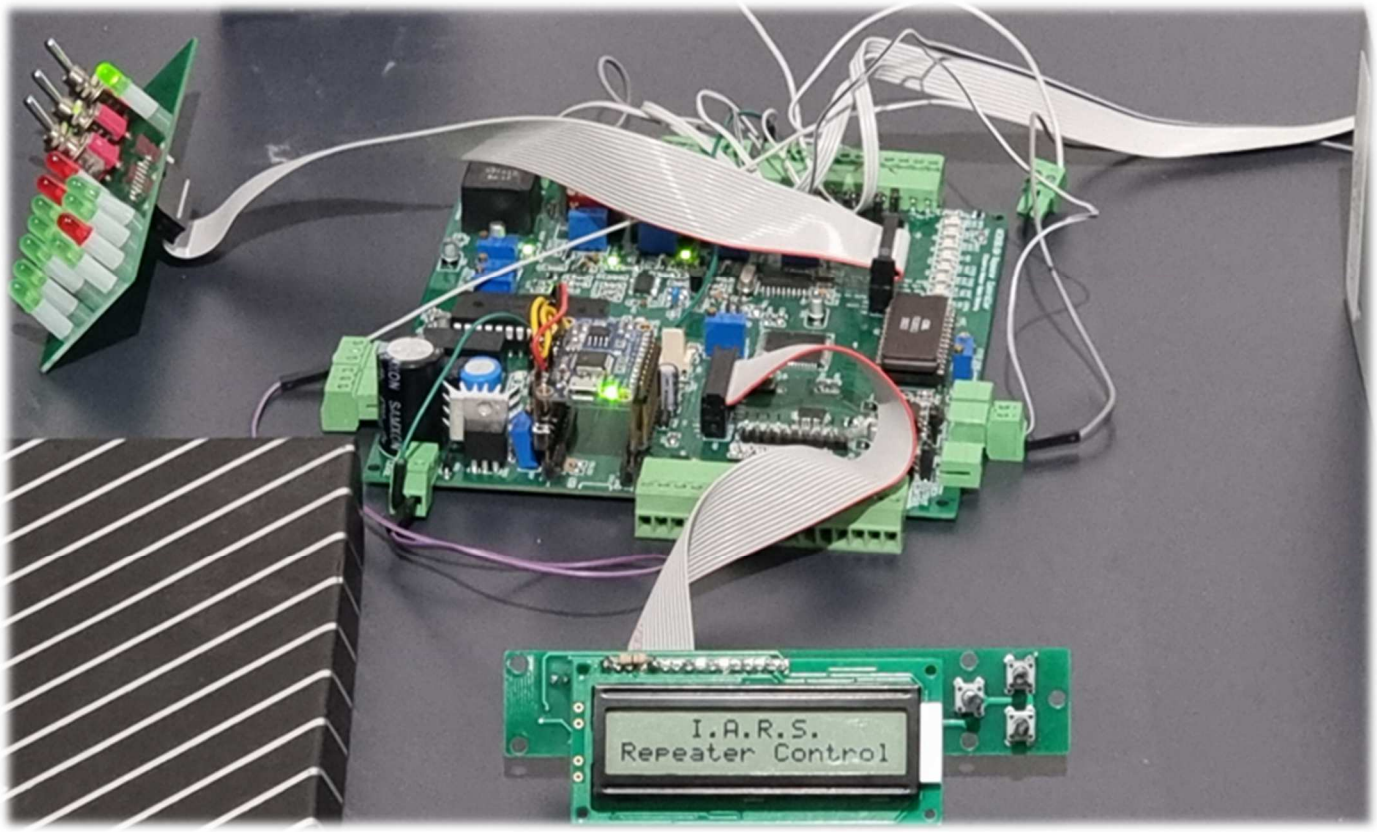
The repeater controller was demonstrated to have a wide range of programmable options allowing multiple idents and customised messaging on the fly, AND “Remotely” operated functions and control.

The controller has a alphanumeric 16x2 line display with full programmable options for tail timeouts, time delays, 8 channel output control, PID fan control for TX PA, Multiple CTCSS transmission per channel, CTCSS mute settings for receive including special priority settings for news broadcast receivers, the list goes on and on!

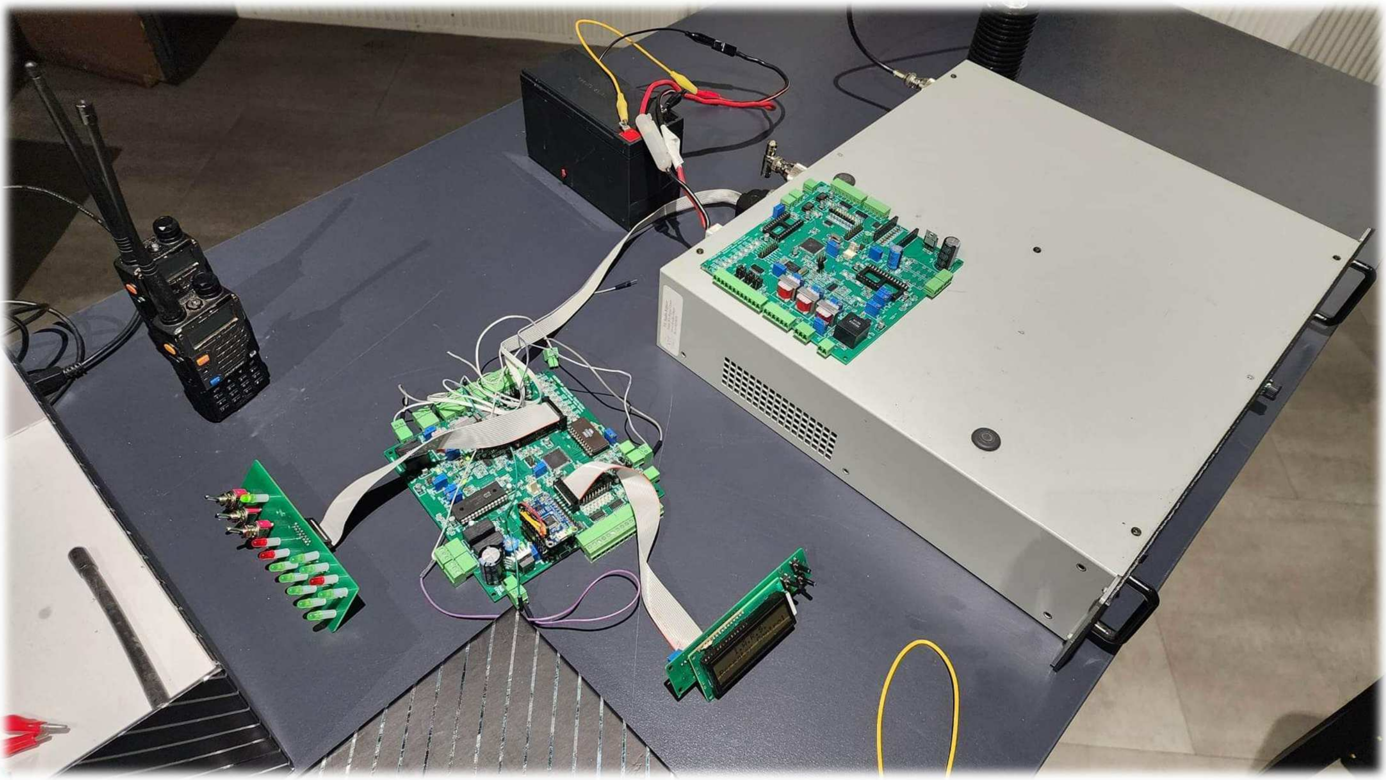




All functions and timing can be accessed via DTMF tones, however, a valid key code will be required before any changes can be made “ sorry hackers” 😊


I.A.R.S.
Repeater Control


POWER
SETUP
MIC
DISPLAY
VOL
YAESU
VHF/UHF AMS Digital Repeater



Special thanks to Rob VK2MT, our repeater guru who has been running the IARS repeaters for a whopping 4 decades. Rob's experience and vision has helped us design and build the all in one controller that can fit inside a 1U rack or repeater control box, and "YES", ticking all the boxes that said "we really need this" along the way.

We all enjoyed the refreshments and the usual chat after the meeting as always.

Welcome our new IARS member

Barry Lacey VK2ADQ

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NEXT MEETING

Next meeting we will have Barry Lacey VK2ADQ (yes our newest member) presenting

"THE DAPTO EME PROJECT" or some may know it as the "MOONBOUNCE PROJECT"

VK2AMW/P EME STATION

This will be a very interesting presentation based on the work of world renown Lyle Paterson, VK2ALU. All this work was carried out in our own backyard,

"GO Wollongong" 😋.

If you interested in learning about the rich history of the IARS, then come along to the next meeting and as usual, a catchup with your mates afterwards with delicious cookies and brew. (We have our very own barista)

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

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WE HAVE A WINNER!!!!!!

Congratulations Pat Kennedy, VK2KPJ, who was the lucky winner of $150.00 CASH in the snowball draw.

A big thanks to Pat for his generosity towards the club for donating $50.00 of his winnings back to the IARS, AWESOME!

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IARS

RES
RADIO & ELECTRONICS SCHOOL

Looking to Upgrade to Standard or advanced and even obtaining your Foundation license we have remote assessing available.

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

We have approved AMC accessors that can offer remote assessments for the AMC.

Please contact Keith VK2KQB at iars.keithb@gamil.com for further information.

Your society supports further learning, please find out more on how we can help you. AMC website is Australian Maritime College - Australian Maritime College | University of Tasmania (amc.edu.au)

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SILENT KEY

Sadly, the IARS lost another member

We pay tribute to Mick Hort, VK2BZE, past member of the IARS who passed away last month battling a long illness. Many were unaware of his battle as he kept his illness to himself, only sharing his condition with a few close friends and therefore his loss, a shock to many. Although Mick wasn't a regular at the club meetings, he was a regular on 145.450MHz, the local W'gong chat frequency.

Mick had a special interest in tropospheric propagation, which he shared in a IARS presentation in 2018, he also published an article with the WIA on 6m Propagation.

A great friend to many and will sorely be missed, our thoughts are with his friends and family

Vale Mick Hort, VK2BZE

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Don't forget the two weekly IARS nets as below

TUNE IN to the IARS NETS Echolink

IARS Tuesday evening weekly 80m NET on 3.666MHz at 8.30pm hosted by Mal VK2DXM and Rob VK2MT

Don't forget to join us 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.
There have been some really good conversations so if you are bored on Tuesday evenings, pop in for a chat.

Saturday Morning EAST COAST NET hosted by Steve VK2BGL

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 currently standing in for Steve who is away.

Disposables Donation Table

Please keep the support for this going and bring oddities in and take some home for a small donation to the IARS. With the next meeting please bring along an donate those old items that you no longer use and may even have thought about throwing it in the bin, someone else may be looking for that very part. Wire, pieces of coax, old parts, plug packs, power supplies, capacitors, resistors, coils, tubes, knobs, anything that someone can use.

REPEATERS

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

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

Current STATUS

- 438.225 with a - 5MHz offset. OK
- 146.975 with a -600kHz offset NO CTCSS, C4FM enabled OK
- 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 OK
- 438.725Mhz with a -5mHZ offset DMR only, OK
- 1296.850Mhz Beacon with simplex repeater function – OK

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”

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

I am looking for either a pair of working 2SC 3133 transistors or an old Icom 716 in a non working condition. We need the PA driver transistors to fix another Icom 716. On two occasions the attempt was made to purchase these devices on the internet only to receive useless fakes. Please send me an email if you can help iars.keithb@gamil.com

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

Also, 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.

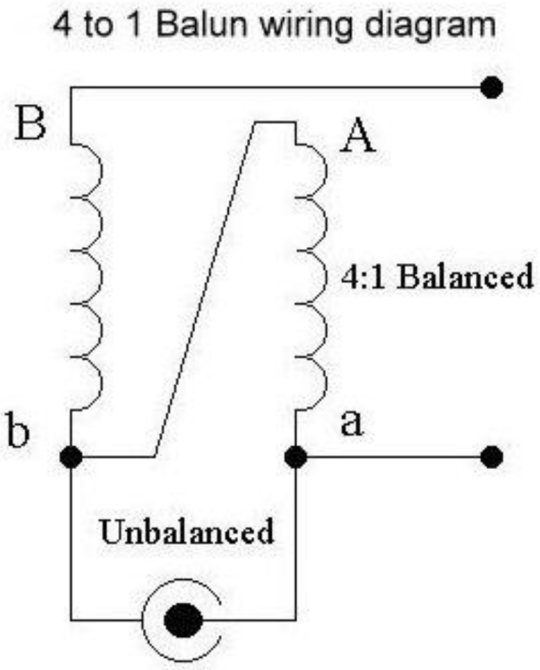
This months Tech corner article

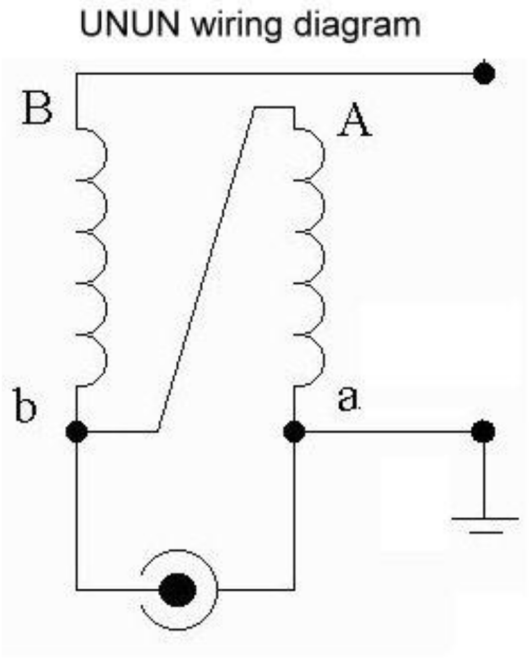
Always wanted to build that Balun but not quite sure?

When is a Balun, not a balun?
When it is an UNUN !

***Balun* = "BALanced-to-UNbalanced"**

***Unun* = "UNbalanced-to-UNbalanced"**





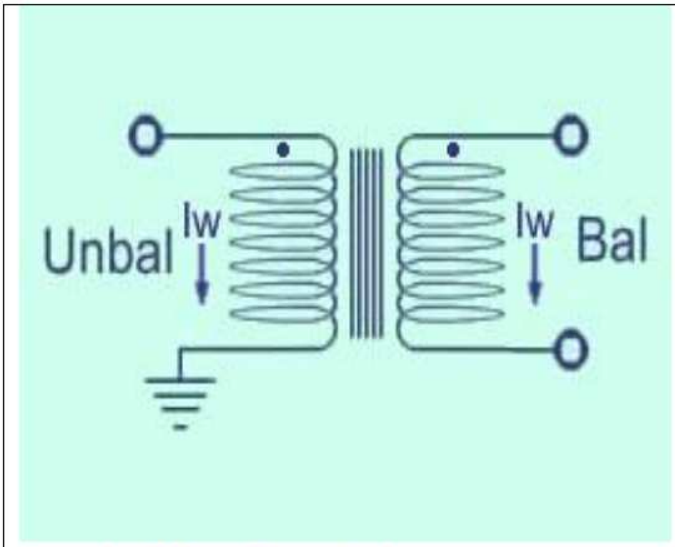
Looking at the two diagrams above you will see the common terminal for the Balun goes to the HOT terminal of the unbalanced side where as the common terminal in the UNUN goes to the COLD side of both the input and the output.

When we say a Balun or UNUN is a 4 to 1 device it will work just as well backwards.

A 4 to1 balun can also match 50 Ohm to 12 Ohms, and a 9 to 1 can match 50 Ohm to 5 ohms. Working in the forward direction a 1 to 1 is 50 in 50 out. A '4 to 1' will convert the 50 ohms of your coax to 200 ohms ' ie 4 times' A '9 to 1' will convert the 50 ohms of your coax to 450 ohms ' ie 9 times '

Voltage balun *A voltage balun utilises some form of transformer action to transfer energy back and forth between a balanced and unbalanced transmission line. A voltage balun involves the transformation of a voltage, often using a core type transformer (even if 1:1) but that definition need not be so restrictive and can include a half wave loop. This implies the transformation of impedance (even if the same). It also includes auto-transformers like the Guanella Balun.*

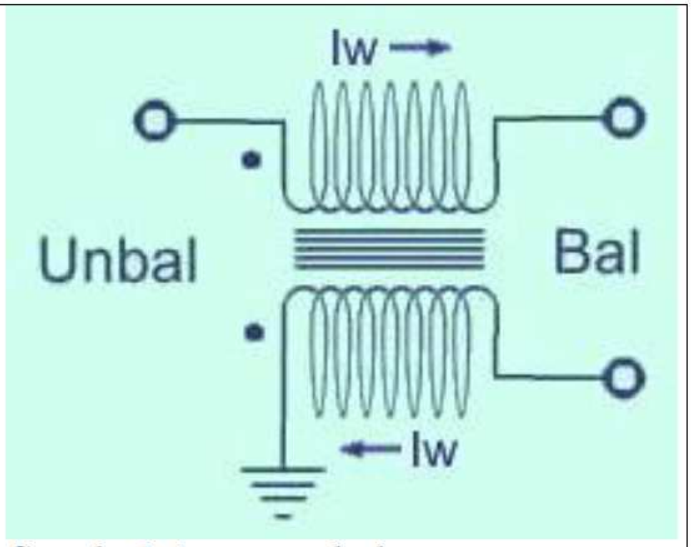
Current balun *A current balun allows working currents to pass but chokes the common mode currents - nothing more. There is no transformer action. Because it is a current controlling device and not a transformer, there can be no such thing as a 4:1 current balun. Put another way, a current balun controls currents presenting a low impedance, through the device, to desired currents but a high impedance to unwanted ones.*



Simple 1:1 voltage balun

A voltage transformer type balun uses magnetic transfer (transformer action) to produce a balanced signal at the output. The 1:1 impedance transformation is achieved by making the impedance of each winding the same. If changing the number of turns on one (or more) winding changes the voltage, it is a voltage balun.

Working currents flow (indicated by the arrows in the above diagram) are induced through the core, in the same sense in the voltage balun but are in an opposite sense cancelling each other out (are not induced through the core) in a current balun.



Simple 1:1 current balun

*A 1:1 current balun controls currents. There is **NO** transformer action. Equal and opposite (balanced) currents cancel each other out and present a low impedance. Common mode currents produce a mutually inductive magnetic field that presents a high impedance to these, unwanted, signals. If the number of turns on one winding is made different to the other, the action will remain the same except that there will now be a small impedance associated with balanced currents but still a much higher impedance for to common mode currents. If changing the number of turns on one (or more) winding changes the current, it is a current balun.*

Common Mode currents *Coaxial cables with shields more than several skin depths thick always carry equal and opposite flowing currents on the inside of their shields and their centre conductors. Current direction and current ratio between the centre conductor and inside of the shield in a non-radiating coaxial line is no different than currents in each conductor of a perfectly balanced ladder line. In both unbalanced coaxial lines and balanced lines, the two conductors making up the line carry equal and opposite flowing currents. When currents flow without close-by opposing currents, we call the unopposed portion of current **common mode current**. Common mode currents promote or encourage external coupling and radiation. In a dipole antenna, or any antenna for that matter, common mode currents in the antenna element are responsible for radiation. In the ham shack or along a feed-line, common mode current is responsible for unwanted noise ingress, RFI, RF burns, and a host of other maladies. Common mode currents, in effect, bring the radiating system into the feed-line or station equipment. Common-mode currents, or currents flowing in the same direction, cannot exist **inside** a coaxial cable at any frequency where the shield is several skin depths*

thick. Shield skin depth serves to isolate the inside of the shield from the outer wall of the shield. Common mode (same direction) currents can only flow on the outside of the coaxial cable shield. Differential mode currents, or normal transmission line currents, flow on the inner surface of the shield wall. Currents entering and leaving the shield and centre conductor at each end of a coaxial line must be equal and opposite or the cable will radiate. If a coaxial line is not radiating, currents in the shield and centre conductor are exactly balanced and opposite flowing. Both types of transmission lines, balanced and unbalanced, will have equal and opposite currents entering and leaving each conductor when they have minimal radiation.

FERRITE vs POWDERED IRON

Both ferrite and powdered iron cores are ceramic materials. They consist of small particles of either iron (for powdered iron obviously) or mixtures of iron oxides mixed with binding substances and are fired in a kiln like pottery. Both are more efficient than solid iron. There are **advantages** and **disadvantages** to using both. Ferrite saturates (fills up with a magnetic field) at a lower level than powdered iron. After any core saturates, it behaves like just a piece of wire and not like a coil anymore. You must also remember that the relationship between magnetic field strength and ampere turns is not linear so, the closer you are working to the saturation point of any core, the more harmonics (mostly odd harmonics) you produce. Suppose you have a powdered iron core and a ferrite core of the same size. Suppose the powdered iron core saturates at 12 watts and the ferrite core at 10 watts. *If you put 5 watts through them, the ferrite, being more efficient, will transfer more power.* If, on the other hand, you put 9 watts through it, although the powdered iron is less efficient, less power is lost in the harmonics. The power transfer at the desired frequency will now be the about the same for both and you won't be disturbing the neighbours TV or upsetting the ACMA anymore.

WINDING DETAILS

The number of turns will depend on the core material. Since there are so many types, exact figures can't be quoted here. For an HF transformer and a powdered iron core, about nine or ten turns per winding is a good place to start. Since a current balun is a type of common mode choke, the more turns the better. There are several ways of testing it but none of them really easy. If 10 turns works OK, leave it. If you really must be sure, one way to test it is to put power through it at increasing levels and run it into a dummy load. Wind a 1:1 BALUN with extra turns using the desired material connecting the primary to an RF source and ground and the secondary to a dummy load (50Ω). You will need a **BIG** dummy load.

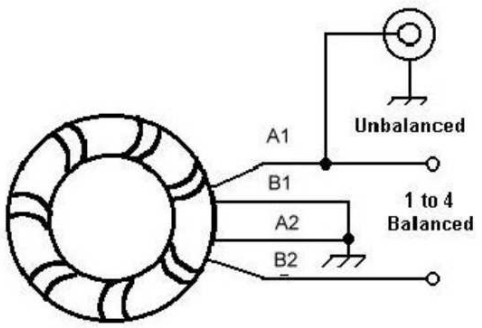
Antenna's, SWR, Antenna Tuners and Balun and UNUN

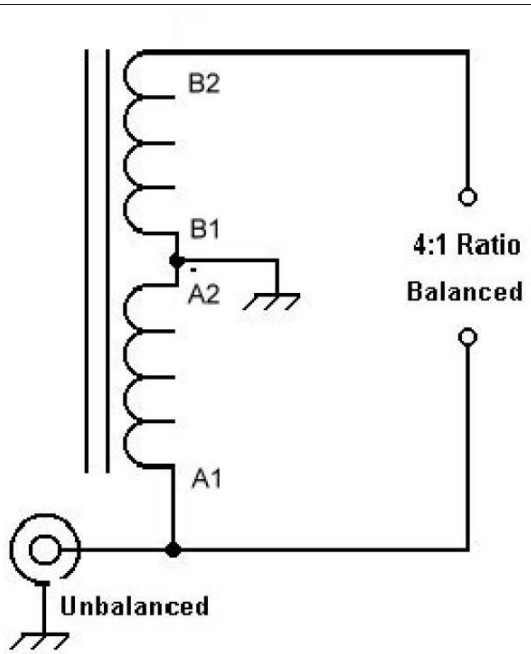
Many modern HF transceivers come fully equipped with built in tuners. While these tuners are great for changing bands, the manufacturers left out a very important accessory; the 4 to 1 balun. Without a balun the transceiver can only feed an antenna which uses coaxial cable. While this may be satisfactory for some operators, this is a real problem for those of us who prefer the super low loss ladder line or wish to use simple loop or long wire antenna.

The only other alternative is to buy an external tuner with a built-in balun which is really absurd after spending the additional money to have one built into the radio. Fortunately a Balun or UNUN can be easily home brewed On the other hand, let us assume for now the idea of using a BALUN/UNUN on a long-wire antenna is simply to bring the SWR within capabilities of some Automatic Antenna Tuning Units, especially the ones built into HF rigs. For example, the Kenwood TS-570 "Built-in AATU" is listed as only being capable of handling a SWR mismatch of 3to1, whereas a typical external AATU is listed as being happy to address at least 10 to 1. In a typical long wire antenna example, the 4:1 balun on 20m would serve to (maybe) bring that impedance down from 600 ohms (which the above Kenwood Tuner example would not like) to 150 Ohms which, in theory, the Tuner would handle.

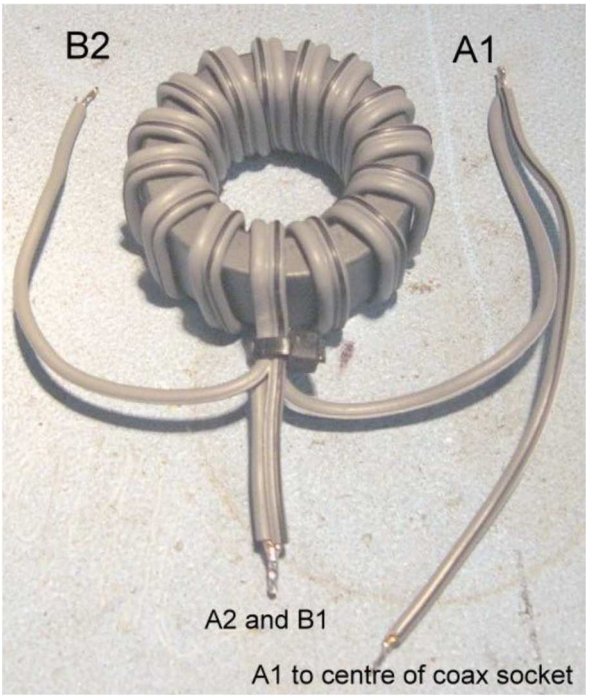
The VK5SRP 4 to 1Balun (this Balun is usually used as 1 to 4)

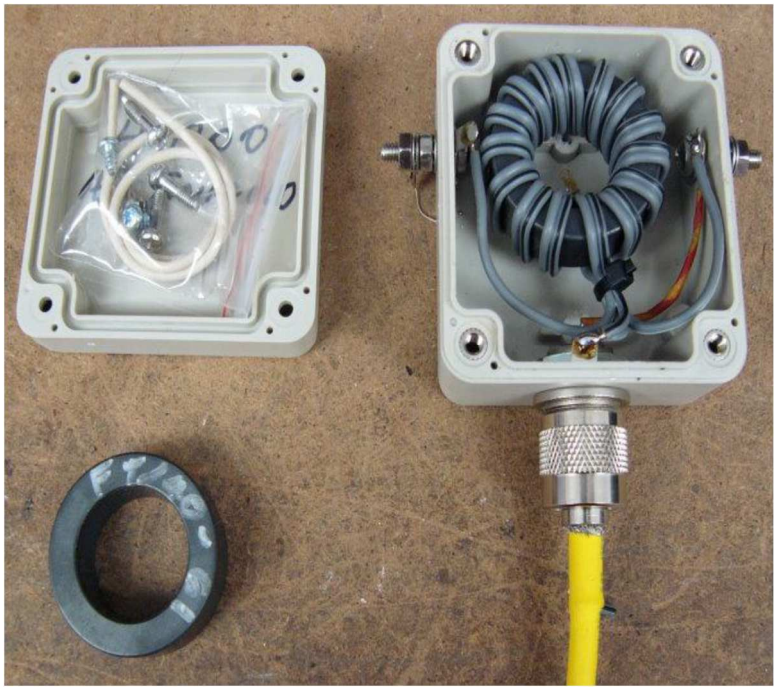
The A1 and B1in these drawing are used to indicates the start of that winding. An alternative method of labelling the start of a winding is to use a dot on the start of each wining.



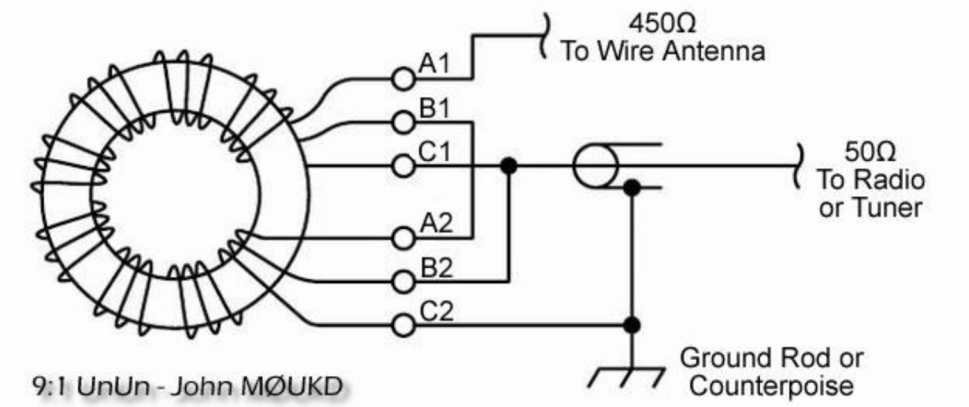


This Balun uses two winding each of 12 to 14 turns and is made with the 14/0.18 twin (medium duty speaker wire). The schematic diagram may be easier to understand than the diagram on the left. The wire must be tight around the core and close together with no overlaps. The above below will make it easier to work out which wire goes to where inside the plastic box.B2 and A2 come off the top of the core in this picture, A1 and B1 come off the bottom of the core. A short length of wire is used to connect A1 to the centre pin of the coaxial cable. Fix the core inside the case with a spot of Roof and Gutter sealer, available in small tubes from hardware stores.





Here is an example of a 9 to 1 UNUN that can be used with typical long wire antennas, from M0UKD http://m0kwr.com/zips/9 to 1 UNUN.pdf

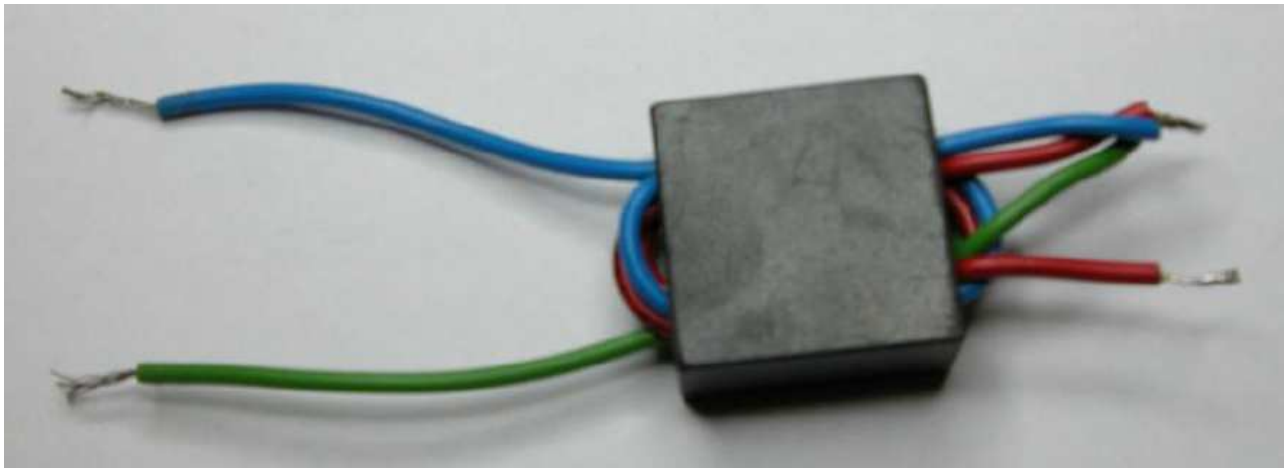


Another version uses an FT140-61 from Mini-Kits (good for 200) Watt and Altronics **24/0.20 Tinned Heavy Duty Hook Up Wire. An** FT240-61 core from the same supplier should be good to 400 Watt. White, black and green wires used in my version and here is the colour code of how interconnected the windings: **Start of windings** - A1 White to antenna wire terminal, B1 Black connected to A2 other end of the White and C1 Green to the centre pin of the input coaxial connector along with B2, the other end of the Black winding.

The other ends of the three winding connected as follows – A2 White to B1, the start of the Black winding, B2 Black to the start of the Green winding and to the coaxial connector centre pin and C2 to the ground terminal and the ground of the coaxial connector. The use of insulated wire may be degrading the performance at 20 Metres. I have measured the SWR on 80 and 40 Metres at just over 1 to 1 and on 20 Metres 1.25 to 1. This may be effected by my measuring setup, I have found there is no substitute for putting the device on a transmitter and making measurements under operating conditions. The core material seems to effect the performance on 160 Metre also.
Another version is on the Loughton & Epping Forest Amateur Radio Society web site:
http://lefars.org.uk/WPblog/2011/11/05/91-unun-project/
They used an (Amidon) Iron Powder T200-2 core. This is rated at 650W SSB and 400W 100% duty cycle (Digital modes etc.). With more and more of us using digital modes the above statement points out an important consideration, digital modes have a 100% duty cycle so we must take this into consideration.

A 2 to 1 Balun using a Binocular core by Berndt VK5ABN

This is another example of a 2 to 1 Balun used to interface a loop antenna and the core used is available from MiniKits here in Adelaide.



An Amidon BN43-7051 core was used for the construction. The primary winding has 2 turns whilst the two secondary windings have 1.5 turns each

Multiple ferrite cores may be used to increase power handling of the balun. A picture of the balun is shown below. **An isolated 1 to 1 Balun** An isolated 1 to 1 Balun can be handy of you wish to isolate the ground of the equipment from the ground on the antenna. For this example I used 16 or 18 turns of insulated multi strand 7/0.25 hook-up wire and an FT140-61 core from Mini-Kits. The winding must be wound tightly onto the core with no turns overlapping other turns. With the cores we are using you will require about 800mm to 1M of wire for each winding. When you wind the core space the wire evenly round the outside. This Balun can also be centre tapped if you wish to use the secondary side with balanced line. If you do this it may be better to wind the primary and secondary winding on opposite sides of the core. **Why not experiment, you can make a Balun or UNUN test it, try it out, and then strip it and try another configuration, after all we are Amateurs and that is supposed to be the nature of this hobby.**

Testing your Balun/UNUN

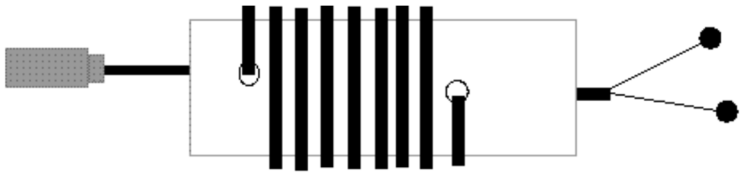
You can of course use your transceiver, a dummy load and an SWR meter but this may be quite inconvenient. A better method is to use an antenna analyser.

Many analyser alternatives are available and when you look at the cost of the rest of your station this is a small price to pay for being able to know your antennas are performing to the best their design can provide. To test a 4 to 1 Balun you will need to put a 200 Ohm resistance on the secondary (use non inductive resistors) and then you should read an input impedance of close to 50 Ohm. A one to one Balun will need a 50 Ohm resistor, six to one 300 Ohm and a nine to one will need 450 Ohm.

The Ugly Balun - The Coax Choke balun:-

When you connect centre fed antennas, like dipoles, V's, Triangles, Yagis, Rhombics, Loops and so on, to coaxial cable, unless care is taken, it is not difficult to end up with feed line radiation. Not only can the loss in power be quite significant, but the radiation characteristics of the antenna system will also be seriously compromised. In laymen's terms, it won't be what you are expecting from the pattern of your antenna. As the feed-line becomes part of the antenna, currents can flow from the line into the power mains and on Television and other communications cables, metal masts and Yagi booms, causing a variety of EMI problems that can be very difficult to trace. Frequently these problems are simply due to unbalance - and the solution is the humble Balun air cored choke. If an antenna system is fed at centre with a parallel conductor line (provided that correct installation procedures are followed) balance will be maintained, USING A BALUN, with currents in equal and opposite phase cancelling each other out.

When the connection is to a coaxial cable, WITHOUT A BALUN, this cannot occur because currents flowing inside the cable from the connection to the inner conductor are separated from those flowing on the outside from the connection to the shield, and the result is unbalance causing feed line radiation. However, if the two electrical circuit elements (antenna and coaxial cable) are coupled using a Balun, balance will be maintained. **Enter the Ugly Balun The Ugly Balun for VHF and UHF -** At 2 Metre VHF an Ugly Balun is construct with seven or eight turns of (RG58) coax cable close wound on a piece of 55 mm plastic pipe. The choke prevents radiation from the feed coax by presenting a high impedance to „coax cable screen currents" which tend to upset the radiation pattern. There are other methods (such as Ferrite materials) which have their own advantages.



UHF will require fewer turns, low-band VHF will require more. It is important that the adjacent turns touch. Fix the ends with cable ties and seal with heat-shrink or self amalgamating tape. Keep the "ugly little thing" away from metal supports or antenna elements. My 6 Metre J pole has an Ugly Balun with twelve turns on a 55mm plastic pipe.

The Ugly Balun for HF – 160 to 10 Metres

For the HF bands the Ugly Balun is made from six or seven metres of coaxial cable close would on a piece of 75 or 90mm storm water drain pipe. Each end can be terminated in the coax connector of your choice or one end can be terminated in terminals (nuts and bolts perhaps) for connection of a balanced line. More details at: http://www.hamuniverse.com/balun.html

Where do we go from here !

So far we have only scratched the surface of this complex subject, there are many resources on the web that go much further but at least by now you may have a basic idea of what a Balun and an UNUN is and how to make a very basic example. Some of the web sites go into much more detail and explain there are more types of Balun with strange names than we have covered here. For example visit Mini Circuits web site at:
http://www.minicircuits.com/pages/BalunApplicationNote.htm To find out about: I. Ruthroff Balun Transformers. II. Guanella or Transmission Line Transformers III. Marchand Balun Transformers Baluns can be made with coaxial cable wound on PVC pipe, hook-up wire or enamel covered copper wire on a Toroid core, an antenna ferrite rod or a bundle of them.

More web

http://www.m0kwr.com/downloads.html
Useful information on Lars OZ1BXM "A Tiny QRP Page**"** http://oz1bxm.dk And last but far from least, VK5ABN's Multi-Band ALE Antenna article at:
http://ping.net.au/index.php?mode=ale_antenna

Where can I get the parts ?

The sealed ABS box (Altronics H 0300, 65x60x40), a suitable coaxial connector, the wire and the connectors can be obtained from Altronics and from other suppliers around Australia. Jaycar should also be able to supply the same or similar items. Four mm bolts and nuts are the easiest way to connect the elements of an antenna to the Balun but if it is going to be left outside in the weather for a long time stainless steel bolts, washers and nuts will be the best choice. An Internet or Ebay search will also provide many sources of cores but be careful, not all cores are created equal and each manufacturer has their own type number system. Cross reference data is available via several web sites.

Cores from the junk box

The cores used in switch mode power supplies for the transformer and the filter chokes are, as a rule, only low frequency magnetic materials and are unsuitable for High Frequency Radio Frequency use. There is no way of knowing what material a core is made of unless you know the brand name and the colour code or the core has part numbers written on it. This is not common. Some manufacturers do use colour codes but there are no industry standards covering this important information and one "red" core will be quite different to another brand of core coded red. An Internet search will provide you with ideas on how to test ferrite cores with a signal generator and an RF volt meter probe. Caution: It is possible to exceed the power rating of a core and the performance of the balun may be degraded during high SWR causing heating of the core. If the core is over heated its magnetic properties will most likely change and your Balun or UNUN will not work efficiently and may even damage your radio or AATU.

This information was extracted from a published article by

VK5AJL, John Langsford

Remember to send us your suggestions, technical ideas, circuit diagrams**, IARS community projects, pictures of your latest shack project, in fact ANYTHING of interest.**

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OLD PROPAGATOR MEMORIES

THE PROPAGATOR

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOCIETY.

P.O. Box 1838. WOLLONGONG. N.S.W. 2500.

IARS is a Member Club of the Wireless Institute of Australia.

PRESIDENT	Secretary	Editor
Jim Potts, VK2BBG, 14 John St, WOONONA 2517	John Doherty, VK2NHA, 7 Risley Road FIGTREE 2525	Ian Bowmaker, VK2ASN, 15 Akuna St, KEIRAVILLE 2500

MONTHLY MEETING. Held on the Second Monday of each Month, at 7.30pm, at the Wollongong Town Hall Meeting Room.

GET YOUR AMATEUR RADIO LICENCE IN 1979 !

Get your licence, and start making friends throughout Australia every evening on 80 metres - talk to other amateurs all over the world on 20 and 15 metres - operate through amateur satellites - run radioteletype - try slow-scan television - use VHF repeaters for reliable mobile communication.

The School of General Studies at Wollongong Technical College is running an approved course in Electronics, which includes all the information and training you need to get your Novice, Limited, or Full Amateur Licence.

If you have NO knowledge of electronics - but are prepared to study hard, you should be able to pass the Novice Examinations in May or November of 1979.

If you have a Novice Licence, OR electronics background - you should be able to pass the Full or Limited Examination in August of 1979.

So - enrol in the course - and become an amateur operator next year! As dozens of new (and old) amateurs in Wollongong will tell you - it's well worth the effort.

MACELEC

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KENWOOD TS120V 80 Thru 10 Metre Mobile Styling Similar to TS820 But Much Smaller. Digital Display - I.F. Shift - Noise Blanker - Analog Dial 25KHZ Per Rev - Vox - R.I.T. - 30watt P.E.P.....	$ 630.00

CONTACT BARRY HARTLEY VK2FE

AS THE JAPANESE YEN IS STILL CHANGING
PRICES SUBJECT TO ALTERATION WITHOUT NOTICE.
ABOVE ITEMS NORMALLY AVAILABLE EX STOCK.

THE 10 METRE NET

The Net continues to grow. The attendance has been up to 10-12 Stations calling in recently. Some of the new stations calling in include VK2's, VGS, VIP, VEJ, VBD and VDM. Rick VK2DAP recently called into the Net from a portable location south of Jervis Bay using 10 watts rep to a 5' Helical. Ned VK2VEK has been doing a stirling job as MC on the Net from his location in Mangerton.

FOR SALE

1. Sweep Tube Linear 40-10 Metres. Uses pair 61Q6's in Grounded Grid. 200W Pep out with 10W in. $150 ono.

2. Sidenbander 10 metre Mobile 96. Channels 28.120 - 28.8 Mhz. $100.

SEE RICK VK2DAP

TELETYPE EQUIPMENT SALE

4 only Model 7B printers up and running at $25.00 each.

7 x 7B printers at $30.00 each.

The early bird gets the cheap machine! Lots of 7B machine parts available at below cost.

TAPE DISTRIBUTERS

Model 14 TD's have been hi-jacked by the club. These machines transmit a message from a pre-punched tape. Available at 50 and 75 bands, synchronous or governed, some with 240V motors. The club has scooped the lot. Price available at next meeting.

SEE RICHARD WILSON VK2ZVX

WICEN

The exercise for 31st, 1st April is one. We're hoping to see VK2's ZVX, AXI, BOU and BBG there. Note that no novices have come forward. A preliminary trip to assess requirements will be undertaken within the next four weeks.

STOLEN

The WICEN 2 metre 5/8 from atop the State Emergency Services building in Figtree. This aerial was supposed to have been supplied by the Club for WICEN use. Actually it belonged to myself. It was a temporary installation done by myself due to lack of assistance. End of lecture!

JIM VK2BBG

Will share more oldies next month

Contests

John Moyle Memorial Field Day Contest 18~ 19th March 2023

Link with more information https://www.wia.org.au/members/contests/johnmoyle/

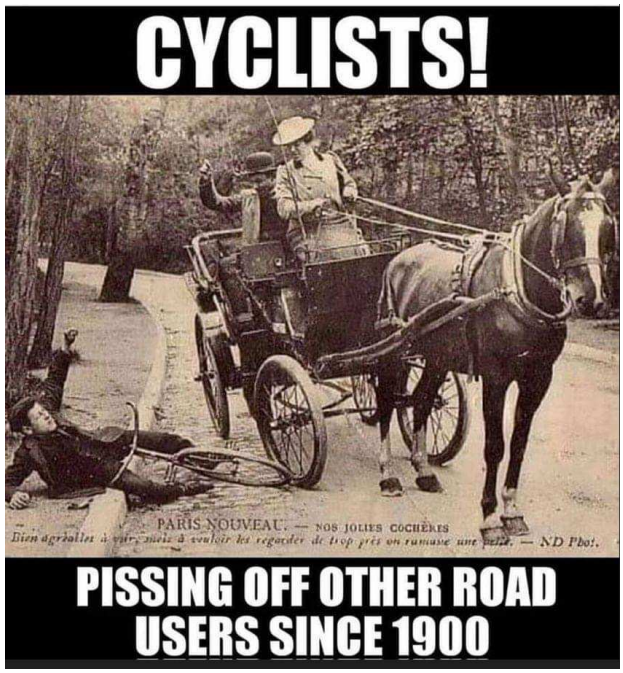
As the IARS do every year, we invite you to join us for a weekend of **FUN FUN FUN**, where, amongst the smell of BBQ and fireplace conversations, all take turns behind the microphone to score points for the VK2AMW. Although we have fun every year and the contest points are only a part of the weekend, it would be nice to get the "First Place" title back to the IARS, which we won three years ago 😊
Please let us know if you are able to come to the Penrose remote site on that weekend. More information to follow. Send RSVP to iars.keithb@gmail.com.au so that enough "South African sausage "can be ordered 😊

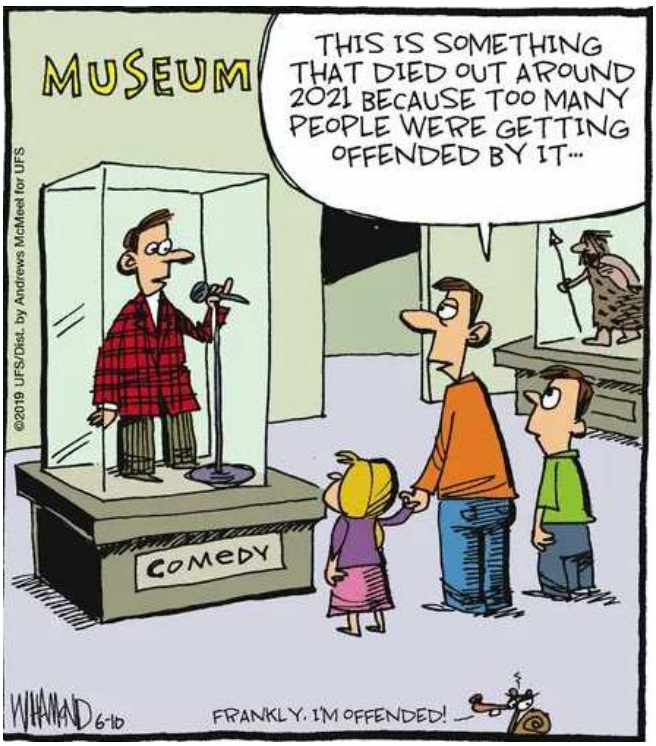
Upcoming meeting presentations ………………………………

- March 2023 : Barry Lacey VK2ADQ THE DAPTO EME PROJECT
- April 2023 : Ned VK2AGV will be sharing the life story of Alan Blumlein, electronics inventor.
- May 2023 : Mal VK2DXM, SDR using the software on your PC.
- June : Hands on use of signal generators, oscilloscopes and spectrum analysers to test and setup filters and cavities

Fun Corner

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





That's all for now, hopefully catch you all at the **Blue Scope visitors centre on the 14th of March 2023**

Stay Safe

73's

Keith VK2KQB

IARS Secretary

IARS, Amateur Radio in the Illawarra since 1948