GATEWAY

The Official Magazine of the Gippsland Gate Radio & Electronics Club Inc A0016893M

November 2024

Antennapalooza Antenna

DX-160 Comms Receiver

Lowering The Mains Voltage

And More

WIA Affiliated Club

Cover photo, Meeting 18/10/2024.
(If you have any good photos, please send them in)

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Event Queue

November:

1st	7:30	Prac night
15th.	8:00	General Meeting
16-17th		International Earth - Moon - Earth Contests - WIA
23rd		Bunnings sausage sizzle fund raiser
24th		VHF UHF Field Day – WIA
30th		Antennapalooza 2024

December:

6th.	7:30	Prac night
7th.		GGREC Christmas Party – club rooms
14-15th		10 Meter ARRL Contest – WIA
29th		YOTA – WIA

Club run events are only possible with the involvement of ALL members.
Without volunteers to coordinate and participate in club events the club will fail to prosper

President's Report November 2024

Greetings All

This last month has gone by with a blink of an eye. Things have been extremely busy.

QRM issues have now been completely resolved at my QDH. I am very grateful for my very friendly cooperative neighbours. Silly little switch mode Power Supply's again the culprit.

The IRLP / echolink node VK3RGW-R is now operating properly with the installation of a preamp bringing audio levels up to a very acceptable level.

Time now to start work on swapping out VK3RGW, in preparation for linking with VK3RWD. VK3RWD is off the air at the moment I'm hoping, we can get a team together to go up to Mt. Worth and sorted out its issues soon.

This Friday night the 15th is the November unofficial General Meeting to be chaired by Klaus VK3IU. My apologies as I have family commitments that night that I can't change.

Saturday next being the 23rd is our Bunnings sausage sizzle fund raiser. Anyone with a bit of spare time that day help with this is always grateful.

Antennapalooza 2024 is coming up at the end of the month. This year looks like a rippa already with a monster 20m antenna being constructed. Check out the website....
https://antennapalooza.net.au/

Christmas is approaching very quickly, and we are proposing to hold our end of year Xmas Party on Saturday, 7th December, at the Guide Hall. Inside or outside to be determined on how good the weather is to us. Although I must say last year went really well despite the rain keeping us mainly in doors.

The Xmas raffle we will be starting to be put together from now, so guys dig deep and bring some goodies for the basket. I will be in charge of tickets this year, so email me or give me a tingle as to how many you'd like to purchase. Tickets will be $2 each or 3 for $5.

Kind Regards

Fred VK3FWR

President GGREC

From The Editor

This month I tried a new supplier, DigiKey.

DigiKey is an American company, however I noticed some ad's portraying an Australian presence, so I thought I'd give them a go with an order.

Boy do they have a large range, well sort of. I was after a pile of electro's for an 'audiophile' power supply, you could choose the same rating, but from several manufacturers, way more than I normally see. Normally I'd be lucky to see just two options of high temp/low ESR, or 'regular' low temp. with DigiKey you can fill a spreadsheet with the options, almost too many. In the end it was kind of muddying the waters, information overload – but at a price, or course, for the more specs you wanted. In the end I ordered 36 105c 'Chemi-con' capacitors, however DigiKey then replied that for a few cents more I could have a bag of 50, now that was nice of them to do that.

I then went looking for a high power red LED star module, here they kind of faltered, with quite a few being not actually in stock, and not looking like coming back – so why leave them in the system for new buyers – again, muddying the waters. In the end I ordered a one watt Cree based module, I would have preferred a three watt, but I could not find one amongst all the dead listing – DigiKey – WHY…..

Then for some high voltage film caps for an old valve radio, no problems here. The best I had found from the local boys were greencaps that were just too low, voltage wise, to be usable.

Now for some semiconductors, I needed some FET's for an amplifier repair, no problems, same for the SMD resistors that got fried, however looking for some transistors to fix an old radio – not so good, same for an old Hitachi amplifier. Sure this is asking a lot, however if you know the specs of the device you can search by almost any parameter, so really good here.

As I entered more onto my list, over two visits to their website (it remembered my order) the delivery costs kept coming down, by the time I hit north of $60 it was free postage. So I finalised the order, then it struck me, this was all coming directly from America as they were listing US based shipping companies, so much for the Australian presence. Had I mixed up my companies, as I really wanted to support the Australian presence idea, even though of course they are based overseas. So I looked on good old Google etc., Yes, "DigiKey Australia". But when I looked around the web site there is no local address, as in no physical store, just a local 1800 phone number (Anyone can fudge that). So I was kind of disappointed, had I mixed up my suppliers, was it Mouser? At lease they do list a NSW address, so time to try out Mouser?

So is my favourite hobby dying? There used to be many stores I could wander into, especially if I headed into the city. Now it's kind of going back to what I saw when I was much much younger when mail order to Dick Smith was it if I wanted more than the local Tandy had.

Paul VK3TGX

Work on Antennapalooza 2024 trial antenna continues.

Remember folks, Antennapalooza is on at the end of the month. Nov 30 / Dec 1, Hopefully the weather will be kind to us this year.

Construction has commenced on the Curtain Array for 20 Metres. It will have 8 folded dipoles, with reflectors phased together. This weekend Dianne VK3JDI and I stood up the first two stages of the two main poles (12 lengths of pvc pipe). This gets us 12 metres high, 60 metres apart. Soon I will assemble and test the antenna at this lower height, because it's easier. Then one week before the main event we will add the third stages and move the whole thing up to the 18 metre mark. Will it work? Let's find out.

Don't forget to put this weekend in your diary. Camp, or just come along for one of the days and we'll try out this experimental array together. Details at https://antennapalooza.net.au/

We are still looking for guest speakers for 30 minute or so slots to present in the pavilion. So if you have a tech project or antenna story to tell, let me know. sparky@dcsi.net.au

Cheers, Ian VK3BUF

Help Us Make Our Bunnings Sausage Sizzle a Success!

Dear Members,

We are excited to announce that our club has been given the opportunity to participate in the Bunnings Sausage Sizzle Community Fundraiser on November 23rd, 2024, at Cranbourne Bunnings from 8:00 AM to 4:00 PM. This will be our third fundraising event with Bunnings, and it plays a crucial role in supporting our club's finances.

As a reminder, our annual operational expenses exceed $3,500, but our income from membership fees is only around $2,500, leaving a significant gap that we need to fill through fundraising efforts like this. Without these fundraisers, we wouldn't be able to cover essential costs or continue offering valuable programs and services to our members.

While our organizing committee is hard at work handling the event logistics and preparation, we still need your help! Here's how you can contribute:

Pre-event Food Preparation:

We need volunteers to assist with the preparation of 14kg of onions before the event. This includes peeling, slicing, and freezing the onions ahead of time. Currently, only 2 committee members have volunteered, and we could really use 2 more volunteers to share the load. Once prepared, we'll also need some volunteers to store the onion in their freezer and transport the packed onions to the event.

On the Day of the Sausage Sizzle:

The success of the event depends on having enough hands on deck. Right now, we are concerned about having a shortage of volunteers on the day itself. Without sufficient support, some members will have to work long shifts at the BBQ (up to 8 hours!), which isn't fair to those giving their time. We need your help to ensure everyone can contribute and enjoy the event. Even just an hour or two of your time would make a big difference!

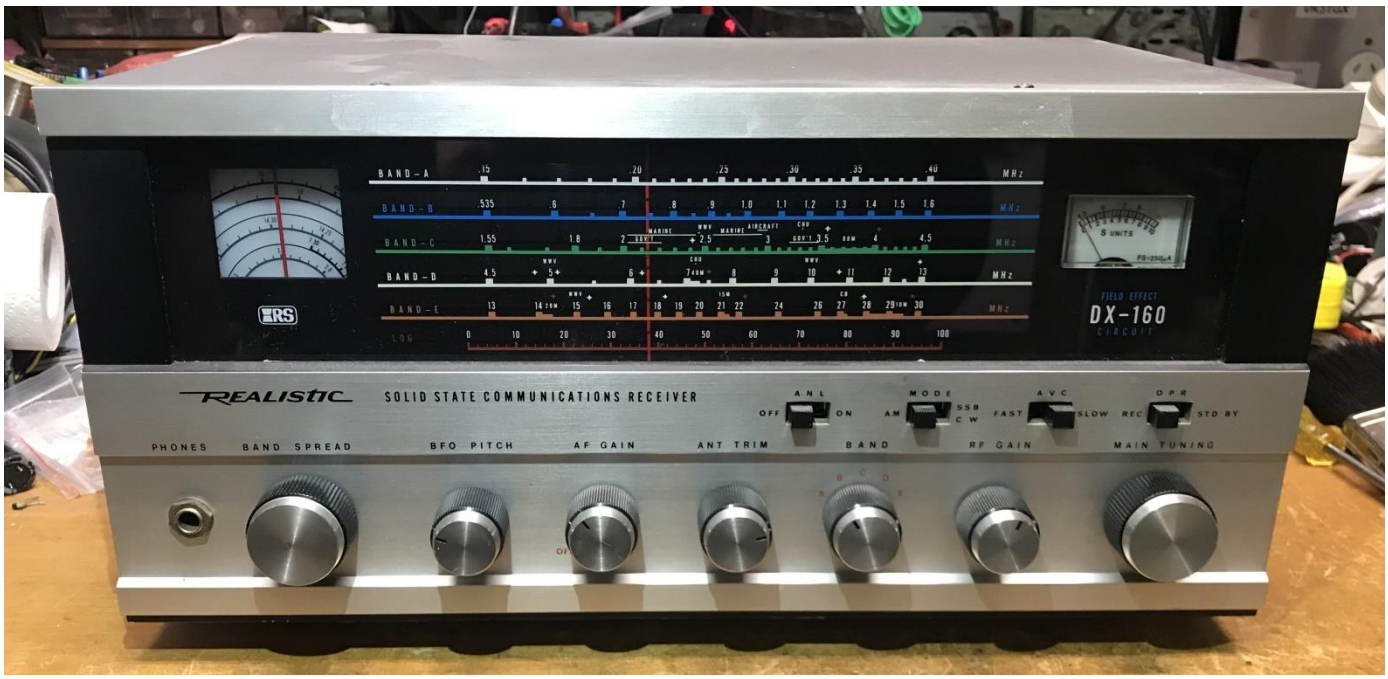
If you are willing and able to help with the onion prep or volunteer on the day of the event, please get in touch with us at committee@ggrec.org.au.

Let's work together to make this fundraiser a success and continue to support the future of our club. Your time and effort will make a lasting impact!

Thank you for your support!

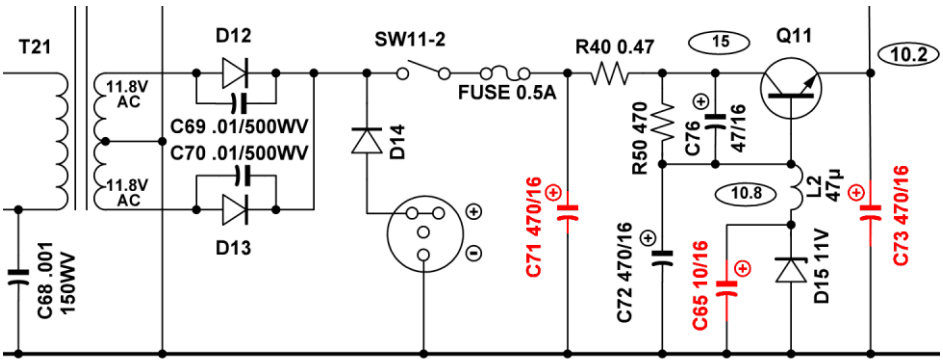
Kind regards,
The GGREC Committee

Realistic DX-160 Comms Receiver



The Realistic DX-160 is a nice short wave receiver, not a top end performer, but fine for general listening. It even features an external standby plug so conceivably it could be used as part of a full amateur radio station, although Tandy never sold a companion transmitter. These days it definitely would not cut it, even the earlier Yaesu FT101 had a better receiver, the main problem is knowing exactly where your tuned to. Eventually I'd like to add a digital frequency meter to mine. I built a crystal controlled RTTY modulator, even finding that was not super straight forward with that big ruler dial and band spreader that packs the whole HF band into just 5 bands makes for some rather touchy tuning. No 'just spin the dial' as you'll skip right over your desired signal.

Anyway after finding my modulator it sounded like it had a mains type warble to it, so I finally took it out to the workshop for a power supply re-cap.



The power supply filtering consists of three 470uf electro's around a simple 10V regulator, so that cannot be hard, I had a bag of 470 63V caps, perfect I thought.

Trouble was when I measured the old caps on my ESR meter, they all came up good, even after 50 odd years, so the original caps were far from dried out/spent. The new old stock caps I was replacing them with did measure better, as a zero on this meter, however that difference is all but insignificant.

So as you can probably guess this did not fix the problem.

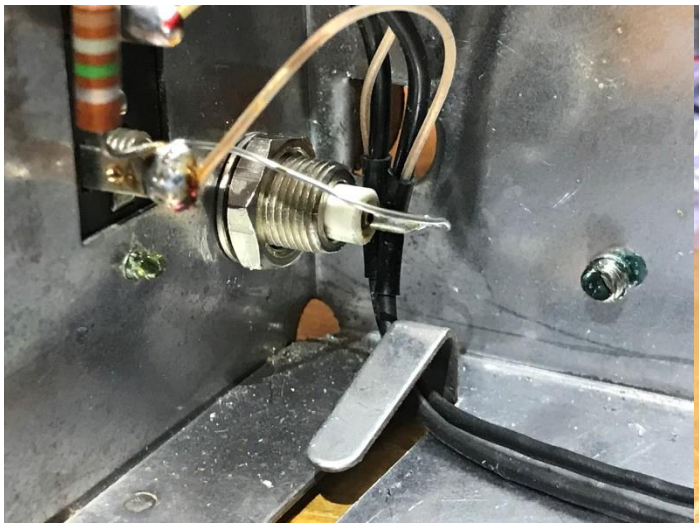
I've just received an order from Digikey with some brand new 680uf electro's however, so I may swap them in – but that's not going to fix anything.

I had a look on the web, and one man did acknowledge a hum fault, but offered no solutions to it. Just a list of parts to hopefully improve the received audio – as in a 'HiFi' frequency response, an almost pointless exercise as it was still using the horrible IC audio amp, so distortion plus.

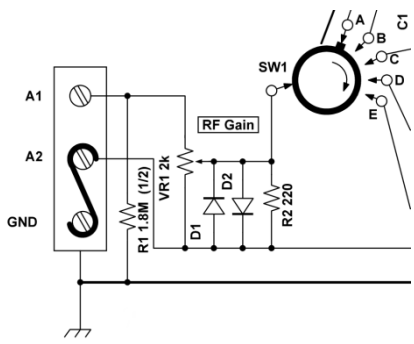
If you want better audio from one of these your best bet is to add a line level audio out that grabs the audio before the amp, like from the top of the volume control, then feed it into a decent HiFi grade amp and speaker. (Only the very latest chip-amps are any good)

Now getting back to the online forums, I was assured it wasn't the power supply as he'd tried his on DC and it was no better.

So is it crud entering the radio via the antenna? On the back panel is just a three way screw terminal block, no option for co-ax, so when I had the radio apart for the re-cap I fitted a BNC socket just above the terminal block.



So now I could get a much cleaner signal into the radio, hopefully avoiding the jungle of wires that live where the radio normally resides. I did make one foe-pah, in that the first two terminal screws are for a balanced antenna, with the last being ground. I had miss-interpreted a resistor on the terminals to mean the second was a less sensitive input, i.e. 'local' and the first 'DX', however when I downloaded a decent circuit diagram, my error was so obvious, so I added the A2 to GND link and all was well. (Not that it overly affected reception)



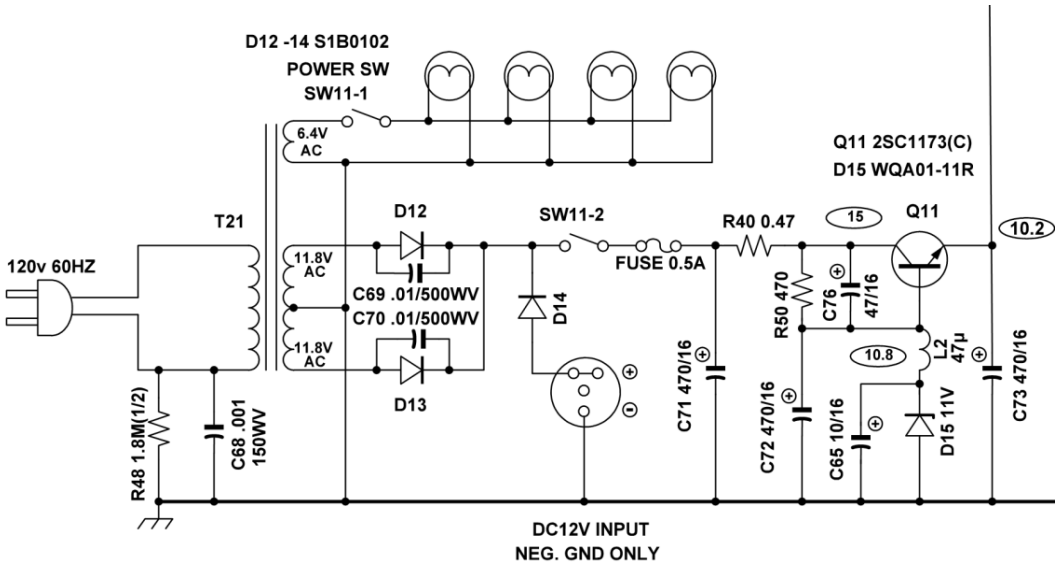
However I did spot those two back to back diodes, and that got me thinking that maybe it was a strong off channel signal hitting those diodes and spreading intermod all up and down the band, and also across my modulator. This was easily debunked by lifting

one end of both diodes. Of course this was not the fault. I had not seen this trick done before, So I looked at the diagrams of two other radio to see if they did the same, No. Of course this is a very poor sample size, so maybe it's a common hack. I did lose the front end from my DX-100 many many years ago from a lightning tickle, maybe this would have saved it.

So after all this I finally tried a battery supply.

And guess what, that was the fault, so much for that forum post. Actually to give him credit he did not say 'battery', so maybe his source of DC was an awful plug pack with very little filtering.

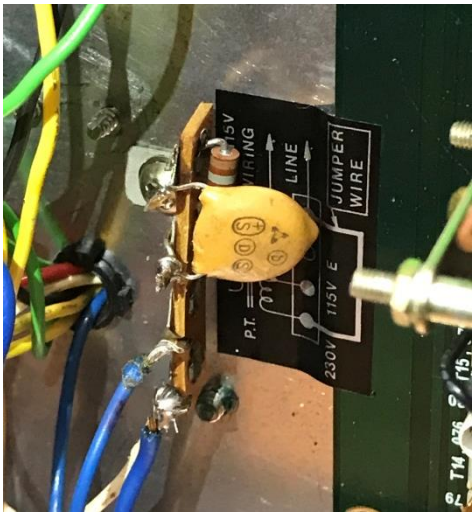
I did also run it with the battery connected to the DC feed I have in my study where this radio normally lives, with no observed degradation, which is almost amazing considering what's hanging off it, lots of computer type digital stuff, and the supply originates from a 20A switchmode, so kind of surprising.



One slight annoyance of running this set from DC is you lose the dial lights.

However these lamps are run from AC, that trapes around the set, so maybe that wiring, or is it just the stray magnetic field from the transformer the source of the hum, this will be my next job with this set, I'll also have to lose that 4 pin DC socket as I don't have a plug, and stuffing wires into it is far from ideal. Maybe I'll swap the incandescent lamps for LED's, I have some from an old Christmas tree set that have a fairly wide light dispersion, rather than the regular focused beam so often seen.

When I was last in I also disconnected R48 & C68 that kind of link one side of the mains to chassis. This is a left-over from America when they didn't have earthed outlets, so they used the Neutral as a pseudo earth, pity if the plug was put in the other way. Back then the plugs went in either way and you had to try both ways to see which worked the best for you.

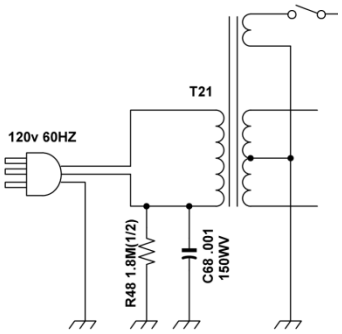


Later US 2 pin plugs and sockets have one pin wider preventing the plug going in the wrong way

Here is that old US mains power bodge, still in place but now isolated and inactive, left in there so the radio is 'more complete', although these sets are not exactly collectable.

Coupling mains line noise into the chassis of a radio seems like a bad idea to me, so good riddance to that one.

Inside, a top view of the chassis. Note the double insulated symbol on the back panel, whilst also being equipped with an earthed power lead…..



Maybe that lead was fitted by someone else later on, however they do show a three pin option in the circuit diagram, the 'CSA Model', whatever 'CSA' stands for, however it is 120V, so Canada? did that one have a different back panel decal?

Also surprised to see 'Made in Japan', kind of rare these days, does Japan do export electronics anymore?

Paul VK3TGX

Lowering The Mains Voltage

Have you ever wanted to 'tame the mains', Normally it's 240V, and something closer to 200 may work better for you. In the previous mag I mentioned an Eminar audio mixer that would have benefited from a lower mains voltage. In this case my idea was to slow down a Ryobi 1200W line trimmer. This unit was a replacement for a 1000W unit that was basically violent with the trimmer line. This 1200W job is just nuts, it breaks the line way too often and leaves tracks carved into my fence palings.

So one day I tried it on a variac, 120V seemed way better. So time for a build that didn't risk my Variac. I wanted a sacrificial offering, that would not be missed should I over stress it.

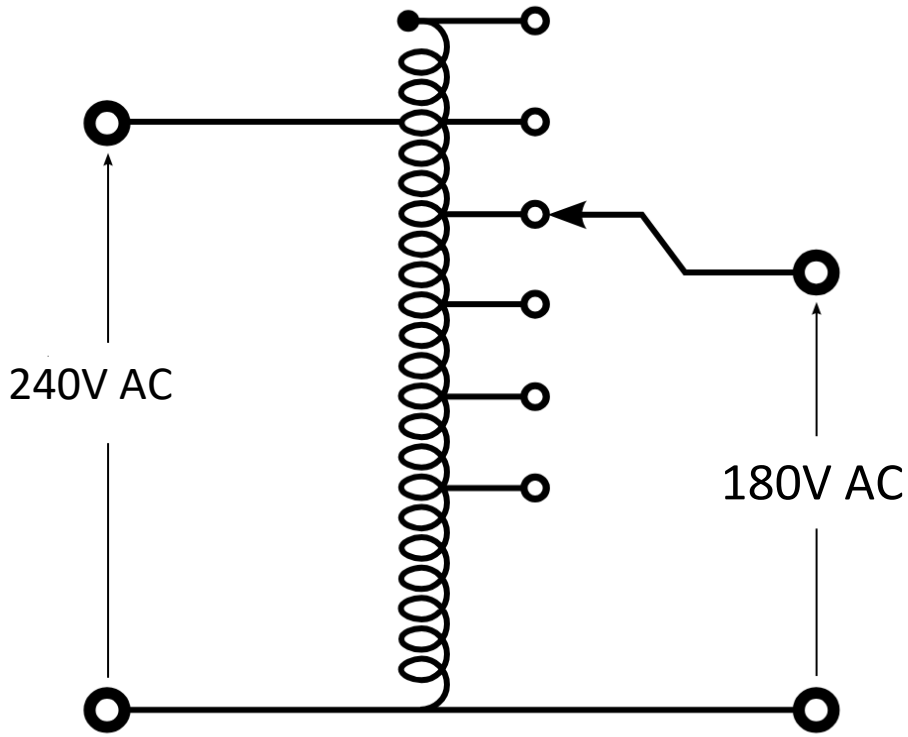
For the first trial I had a largish toroidal transformer that had a split primary, two windings that could be put in parallel for 120V, or series for 240V use in Australia. This was a rough setp as it didn't even have any earth connection, however I got away with it as the Ryobi only has a two pin plug, so the missing earth on the extension lead was not missed – yuk.

Then I found a transformer from an old Sony amplifier, also not strictly an autotransformer, but with nothing to prevent it being used as one. I also had a defunct UPS metal case for it all, so time to marry the two together. This transformer worked as well as the earlier toroid, however some more testing is in order (will it handle the load without overheating). At lease I now have an earthed chassis, and a metal box that should limit the transformer to only issuing smoke signals, not a molten box looking for combustion.

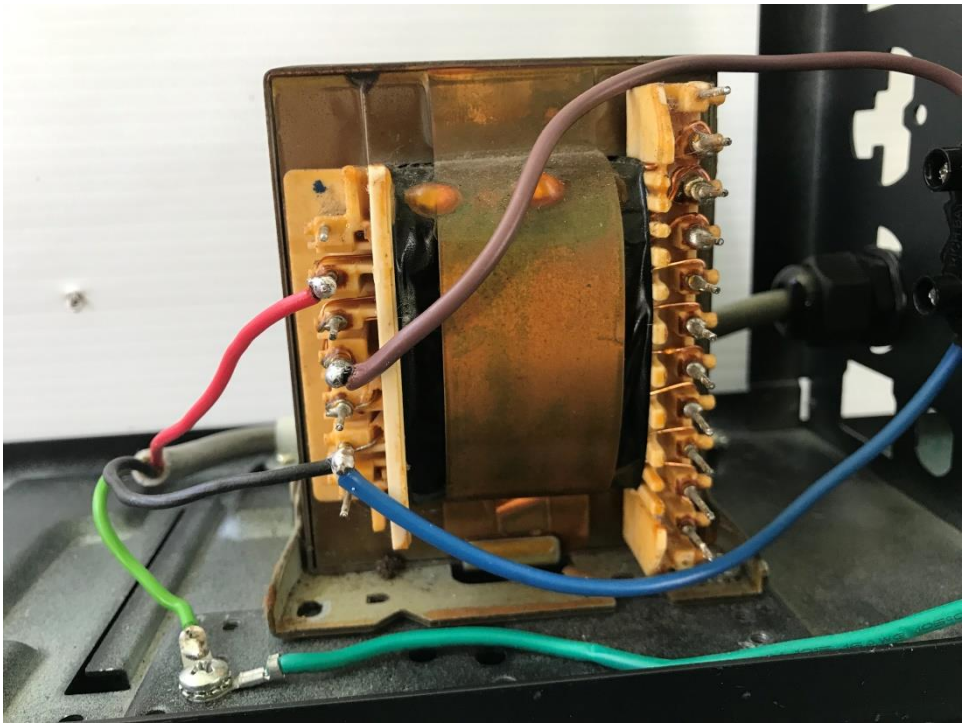
I'll add a nice handle to make it convenient when I use the line trimmer.

This transformer had a few taps on the primary, so with the 240 Mains on the far ends of the winding, this leaved the other taps available to grab some lower voltages, like 120V

The transformer also has secondaries that can also be wired in phase, or out of phase to give us some more output voltage options.



Here is an auto transformer, just one winding with a few taps in it. Mine didn'y have many as many taps, so I'll stick with 120 for now. If I move the incoming to a higher tap that will also reduce the output voltage, However be very cautions if you think putting the 240 incoming onto a lower tap. If you have the specs for the transformer it will tell you if the lower tap can take 240V. In my case I have no information, so I didn't try and push my luck.



Here is the old Sony transformer mounted in that UPS chassis.

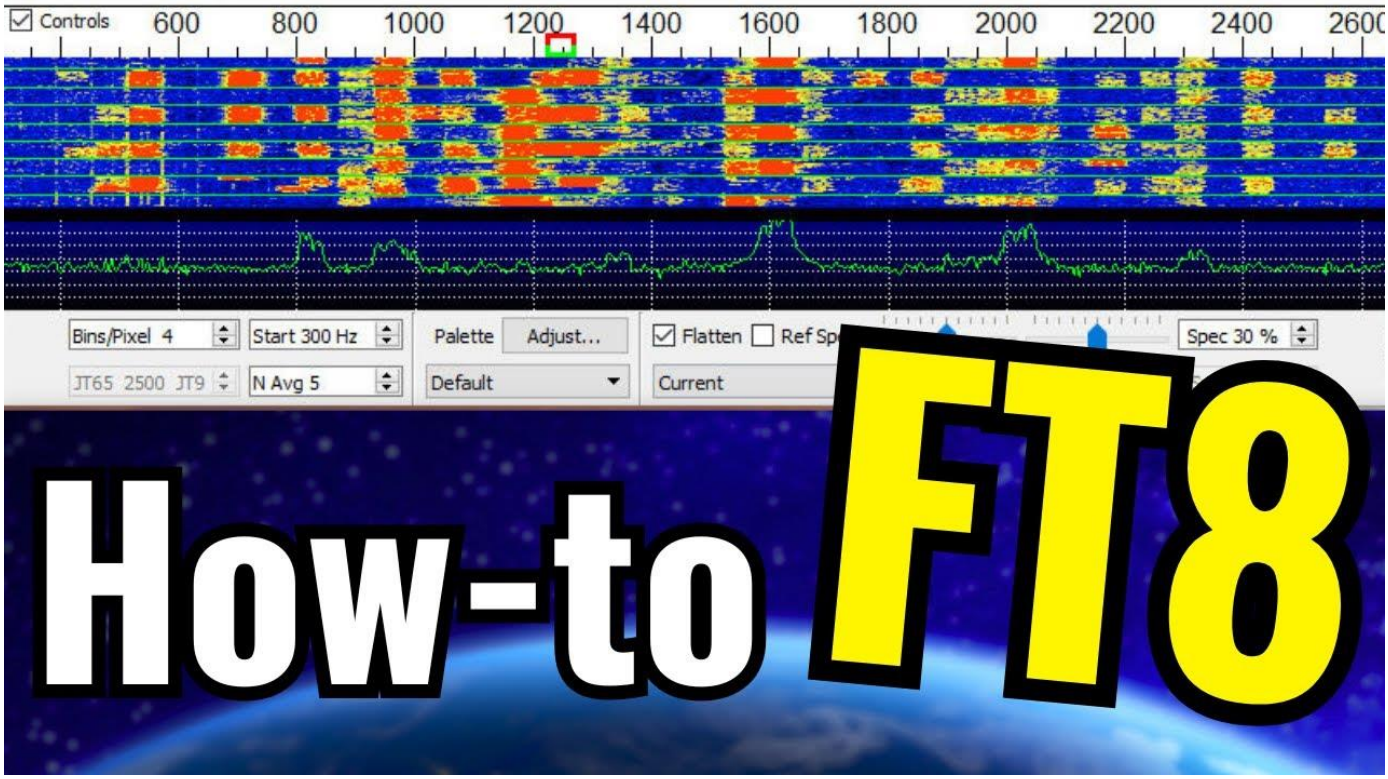
The pins/taps on the left look all but identical to that auto-transformer diagram above, however there is also a row of disused pins on the right, these are the secondaries, not currently used. One set measured at 10V, so I could wire it in series with the output to give me 110V or 130V.

Paul VK3TGX

Meeting 18/10/2024

Interesting YouTube Videos

1957 Collins KWM-1 Ham Transceiver
https://youtu.be/5Eb0kKD1Ieo



The ULTIMATE Beginners Guide to FT8
https://youtu.be/3XNxJtBpOcs

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For their generous support over the years

Club Information

Meetings 20:00hrs on third Friday of the month at the
Cranbourne Guide hall, Grant Street Cranbourne
Prac/Natter nights first Friday in the Peter Pavey Clubrooms Cranbourne 19:30hrs
Visitors are always welcome.

Office bearers

President	Fred Reid	VK3FWR	General 3		
Admin Sec	Klaus Illhardt	VK3IU	Web Master	Mark Clohesy	VK3PKT
Treasurer	Bruce Williams	VK3BRW	Magazine Editor	Paul Stubbs	VK3TGX
General 1	Leigh	VK3FACB	Property Officer	'committee'	
General 2	Ian Jackson	VK3BUF	Assoc. Secretary	Bruno Tonizzo	VK3BFT

Call in Frequencies, Beacons and Repeaters

The Club Station VK3BJA operates from the Cranbourne Clubrooms.
6m Repeater Cranbourne VK3RDD, In 52.575 Out 53.575 CTCSS none
70cm Repeater Cranbourne VK3RGW, In 431.425MHz Out 438.425MHz CTCSS 91.5Hz
VK3RGW Repeater supports Remote Internet access (IRLP), Node 6794 **offline**.
70cm Repeater Seaview VK3RWD, In 431.575MHz Out 438.575MHz CTCSS 91.5Hz
Simplex VHF - 145.450MHz FM, Simplex UHF - **TBA**
VK3RLP Beacons 1296.532MHz & 2403.532MHz **(currently offline)**

Membership Fee Schedule

Pensioner member rate $40.00, Extra family member $20.00
Standard member rate $50.00, Junior member rate $25.00
Fees can be paid by EFT to BSB 633000 - Account 146016746
• Always identify your EFT payments
• Membership fees are due by each April Annual General Meeting (AGM)

Magazine Articles to editor@ggrec.org.au Cut off, 10th of the month
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