GATEWAY

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

June 2024

Koo Wee Rup Get Together

Raspberry Pi & PiicoDev

U.P.S's and Making 240V

And More

WIA Affiliated Club

Cover photo,. Prac night 7/06/2024, see page 5
(If you have any good photos, please send them in)

Contents.

Event Queue

June:

21st	8:00	General Meeting
22-23rd		WIA Winter UHF VHF Field Day (wia.org.au)

July:

5th	7:30	Prac night
13-14th.		IARU HF World Championship
19th.	8:00	General Meeting
20th	12:00	Mid-Year Lunch, see page 3
21st		Trans-Tasman Low Band Contest (wia.org.au)
21st		YOTA Contest 2024 (wia.org.au)

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 June 2024

G'day

GGREC Members

With winter upon us now, things are busy as always.

The month has started out well with the Koo Wee Rup field day a success. Thanks to Mike VK3KTO & Leigh VK3FACB for organising this. With a few of us enjoying a very nice lunch at the local Koo Wee Rup Pub afterwards. Also thanking Bruce VK3BPT who took some pictures & notes of the morning.

We also participated in the VK Shires Contest, with thanks to Klaus VK3IU for organising that. Only a few members turned up for this event, But Mike VK3KTO, Klaus VK3IU & myself had most enjoyable feed at the Shack. Mike's steak and bottle of Red being the aroma at the time.

Guys please also see Mike VK3KTO's notes on behalf of ARV's QSL Card service.

There also has been a petition I have emailed out to you all, put together over concerns that appropriate documentation is no longer being supplied by the ACMA for amateurs qualifications. So they can be appropriately recognised outside Australia. Please read that petition and sign it in support of fellow Ham's wishing to travel. This was also a topic of concern raised at Presidents WIA meeting, Also by other organisations.

Raspberry Pi projects are going well, with reading & writing basic Python code. Also with the introduction of Piicodev software and Time of Flight Sensors (laser distance sensors) also OLED displays.

This coming Friday is the June General meeting and we have Paul VK2APA the President of RASA as a guest speaker via zoom.

Lastly the Mid-Year Lunch will be held on Saturday 20th July 12 noon, in the Function room of the Railway Hotel Pakenham. You should've all received an email from me with the full details.

I hope this finds you all well and hope to see you all soon.

Regards Fred VK3FWR

President GGREC

From The Editor

The other day I saw this ING bank ad, what really caught my eye was the retro HiFi shop shown, blow putting my money into ING, I just want to know where that shop is.

While I was able to gleam a shop name from the ad, "HIFI HUT", Google came up blank on this one. Now it could have been a total fake, as in a prop for the ad, not real, after all they spent a fortune on the ad with their CGI lion, so maybe they had a HiFi enthusiast in their ranks who used it as an excuse to re-create one of his passions – I suppose we will never know. On the other hand I have run into a similar problem reconciling my credit card transactions, as I often see amounts from what looks like an obscure/bogus vendor, with names like 'such and such nominees', with no sign of what name they trade under. This all sounds rather silly to me, as isn't the brand name everything, yet here they are all but hiding it and kind of making it hard for me to figure out who they are. Maybe I want to go back so I can get another doohickie? Silly buggers.

I could probably log onto some government website and look up a list of traders, but then I'd probably be stuck with the same issue, oh well. Then there was the good old Yellow pages, but wait, there was never an Australia wide edition, so that would not work, assuming they still existed. I had a great pile of these directories, they never were listed in the order I needed.

Then I kind of came to my senses, as with my current music sources, a major part of old HiFi is now kind of irrelevant to me, I just need/use a decent amp, speakers, and a DAC. I once had this lovely receiver (radio tuner & amplifier) it had a really nice shiny aluminium front panel, and the big ruler style tuning dial & meter that lit up really nice…… So why did I ditch it? It only had one Aux input, so a pain to use. AH memories…. They still send me off to waste several hours trying to find something that flashed up on the TV for like five seconds.

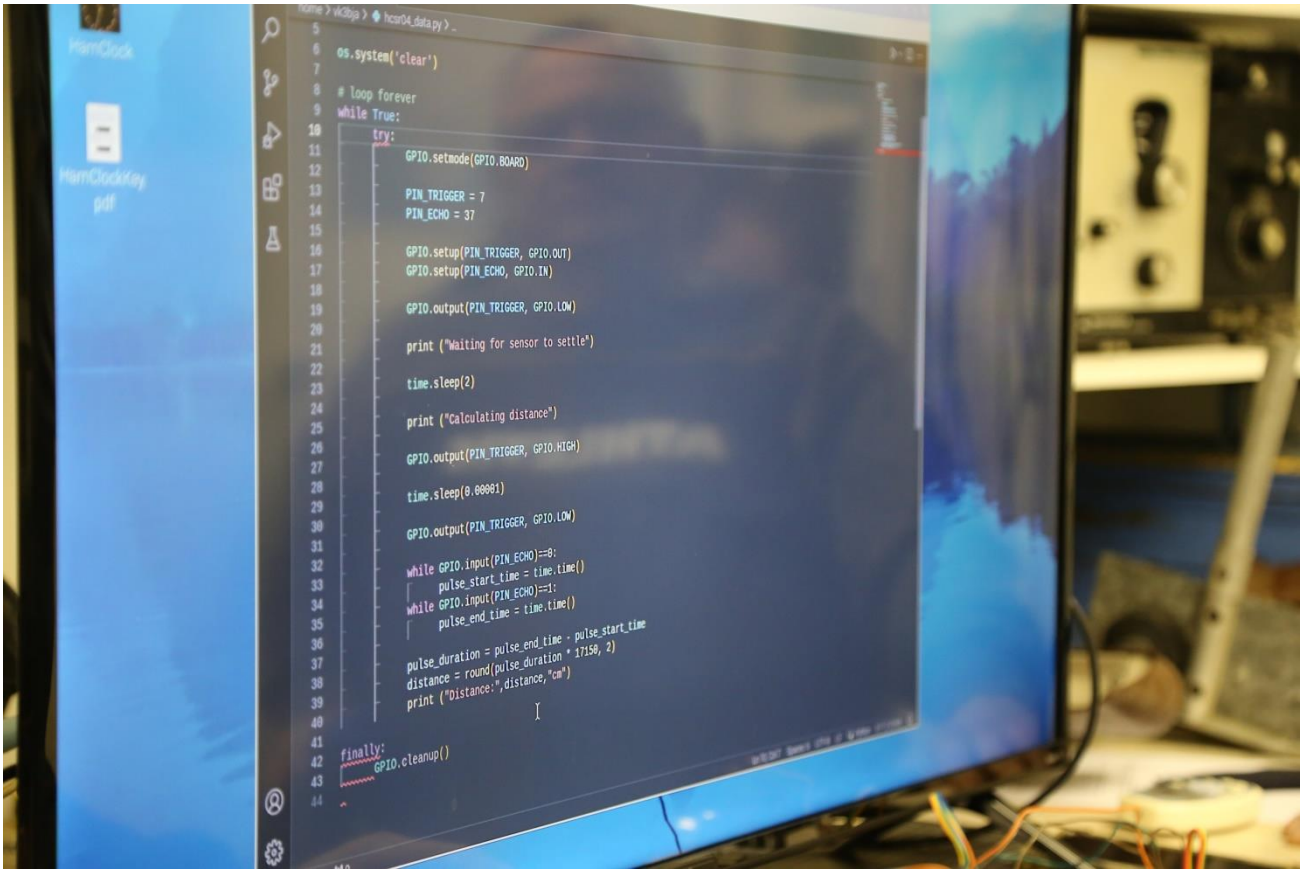
So what's coming up, well there was talk at last night's prac night of the BBQ coming out as members worked the "VK Shires Contest", however I could not get the wife interested, and leaving her alone with her issues seems a tad wrong, so I'm just sitting here, typing while looking at the rather inclement weather through my Nally radio tower camera, in a nice dry and warm study…..

My other task is trying to come up with articles that will interest members, I did the article last month about my personal radio history, with a fond hope that other members would be inspired to tell us their story, however the inbox is bare on that front. So come on, tell us your radio/electronics adventures, they have to be way better than mine. Otherwise any suggestions of other subjects are always welcome.

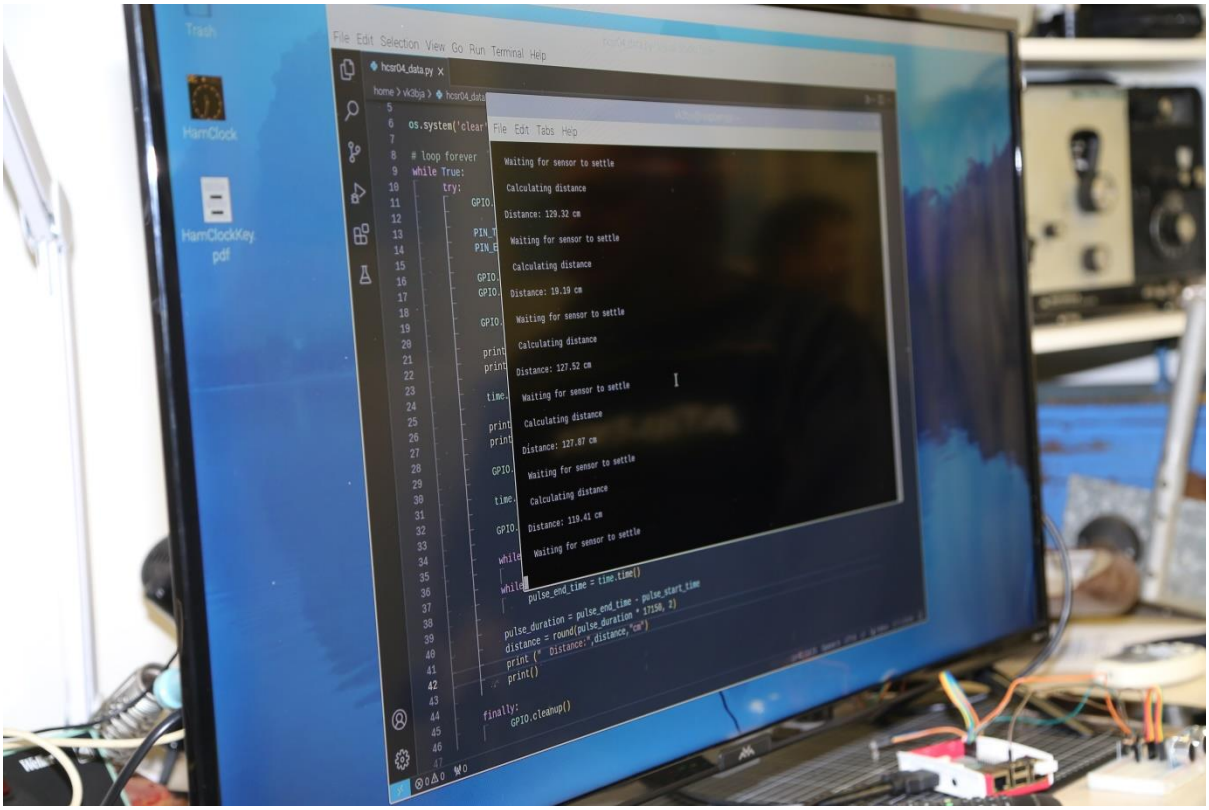
Unfortunately I'm now car-less, so I kind of need a lift to the Friday meeting…

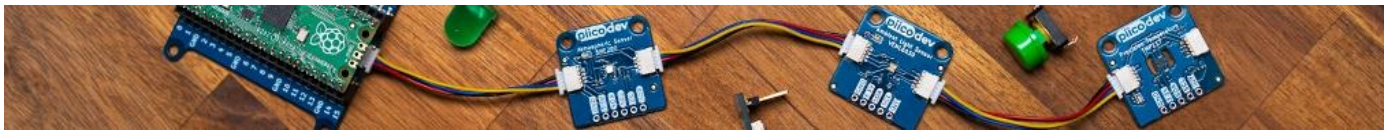
Paul VK3TGX

Raspberry Pi & PiicoDev



At the Friday Prac Night, we had a demo of some PiicoDev modules being driven by a Raspberri Pi. Shown was an ultrasonic distance measuring module along with a pair of temperature sensors, one inside the shack, another outside connected to a Raspberry Pi zero, all driven by some Micro Python script.





For more info on these Try Goodleing 'PiicoDev',

Core electronics appear to be the creators of all this so their website is the place to start
https://core-electronics.com.au/piicodev.html

They, Core Electronics, have a short video introducing their PiicoDev line, unfortunately I cannot directly link it in here, you need to go via the Core-electronics link above.

The main difference between these modules and 'regular' Arduino modules that we are all accustomed to is they feature a 4 pin plug socket to connect the modules together. For the Raspberry Pi they have a breakout board that turns the regular 40 pin header into four PiicoDev four pin sockets

This is the back of their PiicoDev Potentiometer module, as you can see it has an address switch so multiple modules can be daisy-chained together, just make sure they all have a unique address.

Now this is not exactly a large board, so that little I2C chip is absolutely tiny, way beyond anything I've tried to solder. If you need heaps of modules without heaps of extra multiplexers etc. to get them all onto the limited buss of your micro, then these look like a nice solution to that problem.

Core have a selection of video's to guide you https://core-electronics.com.au/videos/

Supported micro's are Raspberry Pi, Raspberry Pi pico, & Microbit.

I did see an Arduino in a picture, but as yet have not found out anything else.

Paul VK3TGX

WANT TO GET YOUR AMATEUR RADIO LICENCE?

AMATEUR RADIO EXAM SERVICE for GIPPSLAND, VICTORIA

Foundation - Standard - Advanced

Our approved ACMA Assessors conduct monthly exam events for anyone wishing to acquire an Amateur Radio Operators licence (Recognition Certificate) or for existing operators to upgrade to a higher level. Exams are free. Successful candidates may apply to the ACMA for a radio callsign that they keep for life. No annual fees .

The examination options are:

- **Practical Assessment**
- **Foundation Theory & Regulations**
- **Standard & Advanced Regulations**
- **Standard Theory**
- **Advanced Theory**

Recommended reading for Foundation License applicants is the free multimedia **Foundation Study Guide** produced by the **Radio Amateur Society of Australia (RASA)**
https://vkradioamateurs.org/flsg/
This guide details all necessary information for anyone attempting to acquire their Foundation License.

Exam events are carried out at **408 Old Sale Road, Drouin West** (North of Drouin) 10:00 am on the 3rd Saturday of each month. The venue is wheelchair accessible.

Exam Bookings may be made by phone at **5644 3118**
or by submitting an email to: **dwexams@gmail.com**
All bookings must be made no later than 7 days before a scheduled exam event.

Candidates must bring a suitable photo ID for an exam event such as a driver licence, student card or passport. Where candidates are unsuccessful, they cannot re-attempt the same assessment until the ACMA refreshes their exam documents. (This is typically every 90 days.) Successful candidates may apply to the ACMA and pay a $41.45 fee for an available callsign. That callsign is then allocated for life without any further fees.
The ACMA has a Callsign Discovery tool which allows candidates to select an available callsign. https://www.acma.gov.au/are-you-looking-amateur-call-sign

Dodgy Battery Chargers

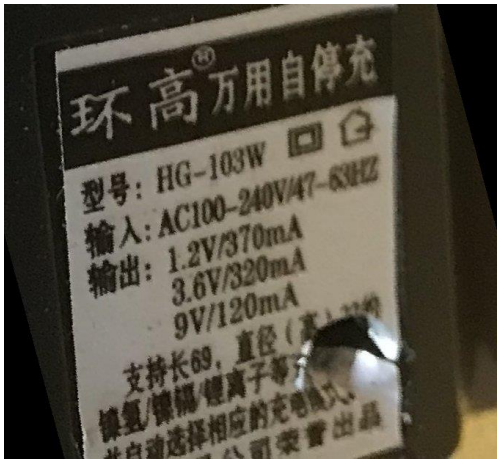
Or should I say outright dangerous. Ages ago I purchased this 'Smiling Shark' Li-Ion torch; it came as a kit with a battery and charger. I was a little wary of the charger and always just used it as a battery holder and clipped on a bench supply. The main reason for this caution is that Li-Ion cells have an absolute maximum 4.20V per cell, exceed that and you are really asking for trouble. However this charger had three 'slots', one for the supplied Li-Ion cell and two spots for 9V batteries.

Nice, one would think, until I checked it with a meter and found all three spots are wired in parallel. Now skipping the Star Trek quote about physics, how on earth can It give a well regulated 4.20V and 9V at the same time!

That and the little fold out US style plug pins on the bottom and the cheap and cheerful aussie adapter made me never look any further. Also I kind of doubted the mains power isolation afforded by a transformer small enough to fit in such close confines

That was until recently when I finally plugged it in, whist monitoring the battery with my trusty Fluke multimeter.

So did it stop at 4.20V, of course not. How far would it go – I don't know for I immediately terminated the charge.



I could have substituted something like a very large capacitor and just let it go, but I didn't. Closer inspection of the label says 1.2V 370mA, up to 9V 120mA, so kind of a modified constant current type universal charger, although I had a laugh at the 103W bit, that would imply over 20A at 4.2V – or is that just a sneaky model number trying to make this thing look better, like the 1200W on the front of a cheap set of computer speakers I had, it would take a lightning strike to get that much power through them.

So I suppose there could be a Ni-Cad style 3.6V cell this could safely charge….. The charger does not actually say "Li-Ion" on it.

So are we dealing with a pile of 'no idea' retailers just boxing up bits that kind of look right together and selling them to poor unsuspecting (and trusting) customers which shove the battery into the charger in their bedroom in case of an emergency, only to create one by inadvertently setting fire to their bedroom, like those e-scooters one hears about.

Paul VK3TGX

KOO WEE RUP Get Together

Saturday 25th May saw 6 brave members front-up to the Koo Wee Rup Observation Tower on the South Gippsland Highway Koo Wee Rup, which is a short distance east of the town of Tooradin

Attendees:

Mike VK3 KTO, Leigh VK3 FACB, Bruce VK3 BPT, Don VK3 ABI, BrunoVK3 BFT, Fred VK3 FWR

It was a cool foggy morning and the 10 metre band was open with Mike-KTO making contact from his vehicle with a ZL station

An on-site coffee van was well patronised, not only by the GGREC members, but also by what was a steady stream of travellers coming in from the highway

There were not a lot of radio contacts made during the 2 hours on site, but an interesting observation was, the differing receptions received on the various brands of hand-held radios that were monitoring/working RGW from the top of the observation tower

Leigh – FACB, had his `Chinese branded` radio out-performing the other top brand radios. The received audio on his radio was noticeably superior to all of the other branded radios - it obviously has a very good front end

The onsite information board detailed an apparently little known fact about Koo Wee Rup, being that in 1921-22 an experimental radio receiving station was established by Amalgamated Wireless Ltd. This radio station could receive transmissions direct from Europe without the need for relay stations and it was stated that this discovery helped revolutionise international communications between distant countries.

BruceVK3 BPT

ARV QSL Card Service

Recently I received a bundle of QSL cards from Amateur Radio Victoria, together with a letter informing that they are currently in the process of up-dating the QSL Buro system.

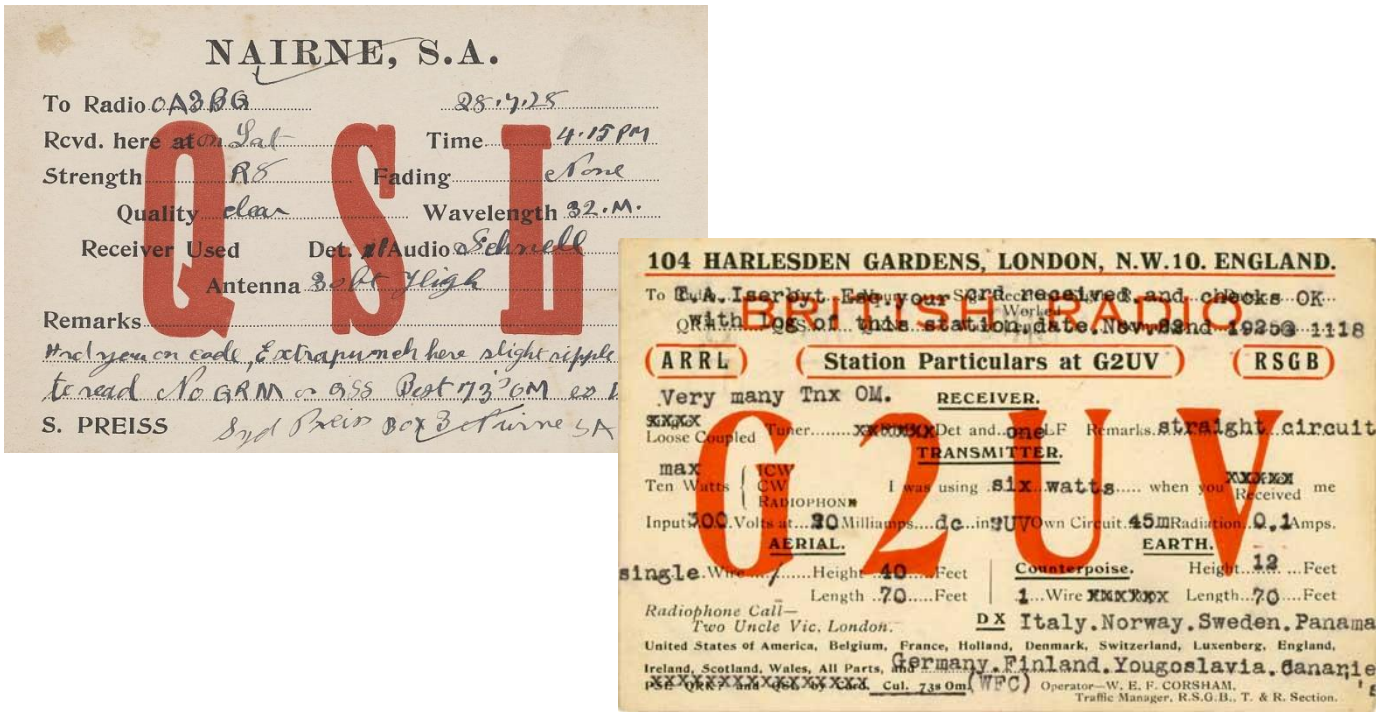
"As part of the process the database of bureau members has been reviewed and a number of callsigns have been found to be ineligible through the failure to renew ARV or WIA subscriptions"

" The current distribution contains cards for all members on the old database, however cards for ineligible callsigns will no longer be sorted"

" A period of two months from May 10th has been allowed for rectification of member status".

I am reluctant to publish a list of ineligible callsigns but if any member is in doubt as to their status, if they contact me I can let them know.

73 de Mike VK3KTO



Speaker Recycling

Down my neck of the woods we had a council hard rubbish collection, so in the flavour of that TV show, Cash 4 Trash, Channel 31, where they go all around looking for treasures I had a little wander, well not so far, just next door.

He had a set of powered speakers that were stored in a plastic tub in his garage, unfortunately the roof developed a leak right above the box, by the time he found out it was too late.

There is nothing like electronics with a high tide line.

Opening them went smoothly until the last screw, it was too far gone to get a good purchase with my screwdriver.

So I did the customary ‘drill out the head’ however that didn’t quite remove enough before the drill only wanted to jump off and make holes elsewhere, so out with a large screwdriver and my trusty ‘gentle persuader’ hammer.

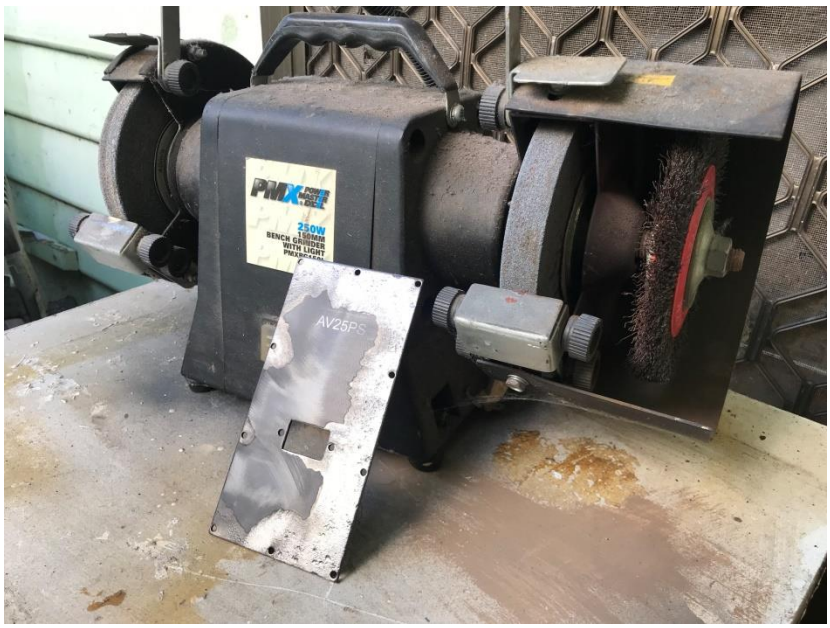
I wasn’t directly targeting the screw, rather driving a wedge between the panel and the plastic box.

When done the panel was kind of free however I could not fully remove the electronics as the power transformer was floating about inside preventing the circuit board and heatsink clearing the opening.

Much fiddling and the odd wire snip had it finally free.

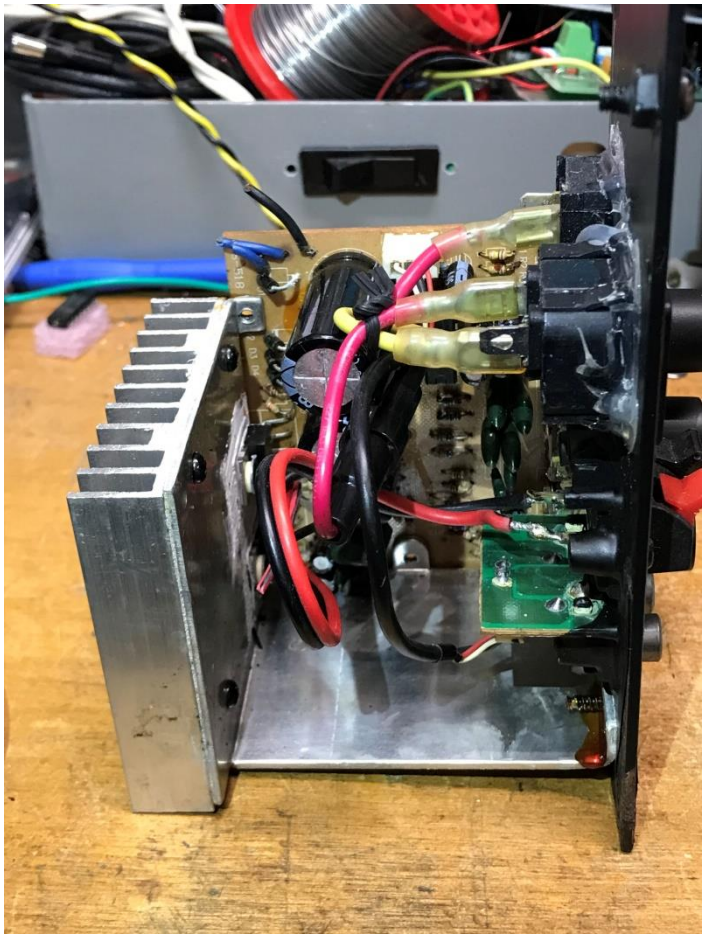
Normally in these units they use what is commonly referred to as a ‘Plate amplifier’ where everything bar the drivers is mounted on the back panel. Down the bottom of the panel either side of the “AM AV” logo is the customary transformer bolts, however they just fill the holes here. It appears that the designers upgraded the design meaning the transformer would not fit between that panel and the back of the bass driver, so instead they glued and cable tied a toroidal transformer up near the top. Of course this glue had let go leaving the transformer flapping about on some loose-ish cable ties, hanging between two pillars only meant to hold the box front in place.

So how to proceed? Should I resurrect, throw away of otherwise make something of them? So my first step was to connect the slave speaker to an amplifier and see what we had, I was kind of surprised, it didn’t sound half bad. I was kind of expecting what you normally get from a radio style communications speaker, good for voice, horrible for music. There was bass, and no glaring peak in the midrange, so someone had been trying, maybe the fact the design had been upgraded with that toroidal transformer etc., kind of speaks of some effort by the designers.



So I set about removing the rust from the backs. The panels were actually reasonably thick steel so plenty of meat for my bench grinder/wire brush to get into.

However the main speaker seemed to be worse off with corrosion on the board etc. so I hummed and harred for a while then decided to ditch the amplifier module and turn them into a pair of regular passive speakers.



I already had a set of powered speakers in a Pelican ‘go box’ that rarely saw any work, so what’s the point of me having a second set.

I looked up the specs on the amplifier IC’s, they were actually not bad with specs under 0.1 percent distortion, so ‘better’ chip wise, so the amp IC’s have been scavenged for the bits box, but the rest is destined for the next e-waste trip to the tip.

I kind of have my doubts about these kind of speakers, normally a HiFi stereo pair are identical to each other, however these are not with one set of drivers right up next to the amp, so good, however the other is on a longish length of speaker wire, not so good. Also one box is full of electronics whilst the other is empty bar the drivers of course, so not exactly ‘balanced’. In this case they are not really marketed as quality HiFi, however why not strive for a better design/sound.

When I’m listening and I hear something odd, it’s nice to know you’ve done what you could to make it sound right, so more of a chance it’s actually in the audio your monitoring rather than an artefact introduced because of some whacky lop-sided chip amp setup.

Whilst not practical in these small speakers, if I were after my ideal active speakers I’d want both box’s near identical, as in the Left amp in the Left box and the Right amp in the right box, both preferably in their own ventilated ‘electronics’ enclosures, away from the sound inside the speaker. Amps usually like ventilation, not an option inside the actual driver ‘chamber’ of the speaker.

So I am making a new back out of scrap using the back plate from the other speaker as a template, so no more integrated amp & soggy transformer.

Paul VK3TGX

U.P.S`s and Making 240V

UPS, or 'Uninterruptable Power Supply's' are a very nice addition to ones electronics, while mostly used for computers they can be used for other things, like keeping your security camera's up, or your NBN phone up, as even Telstra had a special box for that one.

These days' laptop computers seem to be all the rage, these kind of have a built in UPS assuming yours has a good battery pack, unlike the dinosaurs I play with. (Donations always welcome), but what about your WiFi?

Technically these are really standby power supplies as they stay dormant until the mains drops out, then they quickly start up.

Whilst cheap UPS's are generally only meant to keep a computer up for say 10 minutes to let the user safely finish off what they are doing and to properly shut down everything, adding an external battery can be an option. Just be double sure the DC side is totally isolated from the AC side, as some really cheap and crappy ones have the battery floating at 240V AC, not a nice thing to find the hard (shocking) way. Also don't forget cooling – does it have a fan etc.

Here is a 'nice' (I thought) 12V powered unit that I was investigating; however all that's between me at the 12V side and the mains is a set of relay contacts, not good enough in my book.

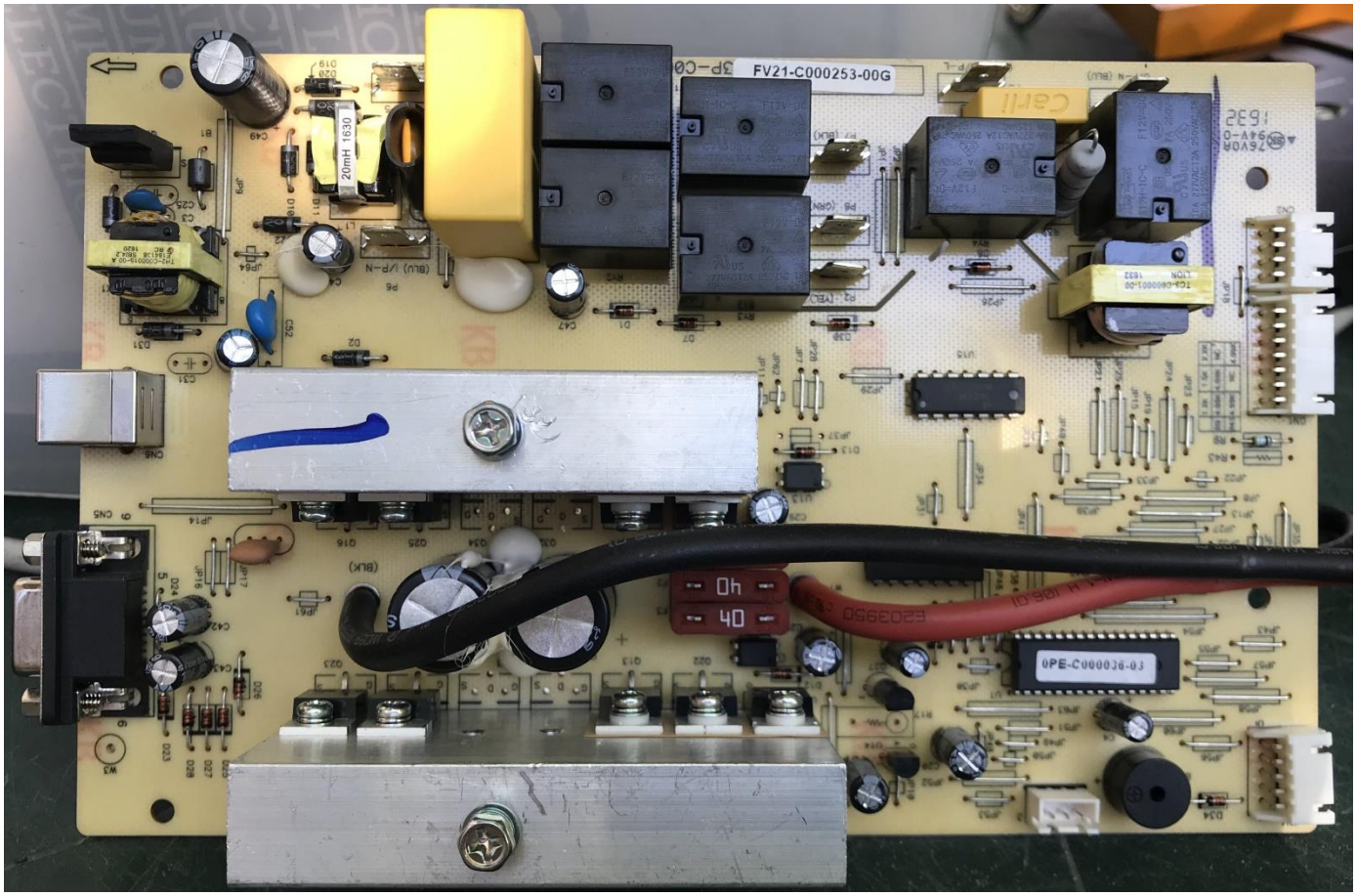
I did try it just as an inverter, ditch the 240 input, but it got unstable with some of my loads so it is now in the 'if your desperate' box.

This one fits the description of not really isolated as when in inverter mode the outgoing 240AC is connected to the DC, just isolated by a contact when in mains mode. To me that's bad as if anything happens on the load side, then the battery and potentially you are bouncing at 240V 50Hz.

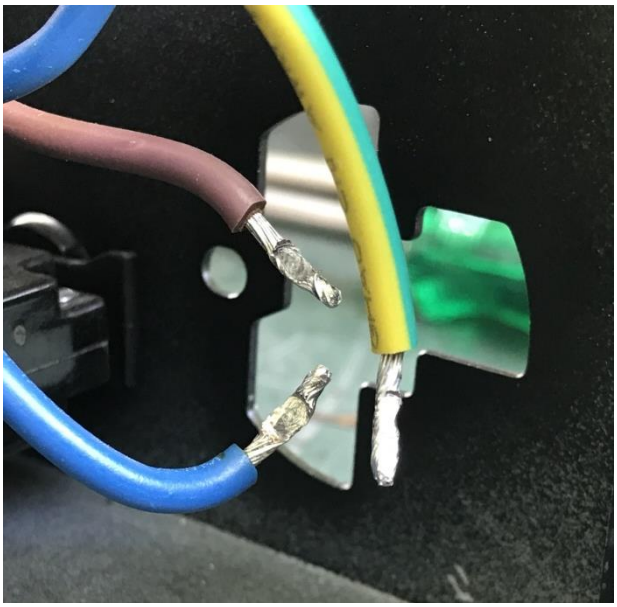
Getting back to the first UPS, after finding it used two 12V batteries for 24V, not directly compatible with my 12V systems, I started stripping it to see if there were any surprises or goodies for my parts collections, I'll have to keep looking for a decent 12V based UPS.

Running 24V and above is fairly common as generating a thousand watts of 240V really hammers the batteries, just do the maths, ignoring any losses 1000W needs 84A at 12V!

Of course these UPS's are not that efficient, so that 1000W job could easily pull nearer 100A from the battery, the cheap ones are only meant to run on the odd occasion for a few minutes so little to no effort is put into super efficiency. With a true UPS the load is always run from the inverter, so they are usually way more efficient. Looking at the smaller white UPS, there is all but zero ventilation, just two blocks of aluminium that can hopefully soak up all the heat and hopefully not let it pass into the stupidly hot zone before the battery gives out, hence that fan I added with double sided foam tape…. (It just makes a lot of noise with minimal cooling)



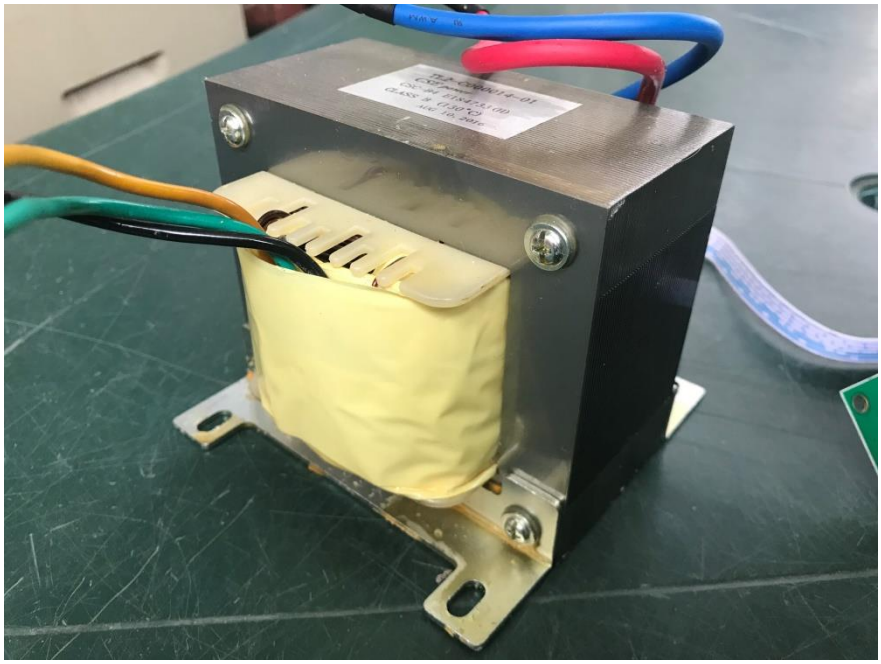
In the bigger one was a few 12V relays, a few FETS, 9 pin D, 14V transformer, but not much else. I'm hoping to cut away the PCB section with the USB socket as it has what looks like a serial port chip alongside underneath the PCB.



One thing I wasn't expecting was the twits who made this thing had tinned the 240V wires going into the screw terminal outlets, as usual the solder had flowed leaving rather loose connections, a fire just waiting to happen. So it's actually good I scrapped this one. How much more of this junk is out there? Kind of scary.

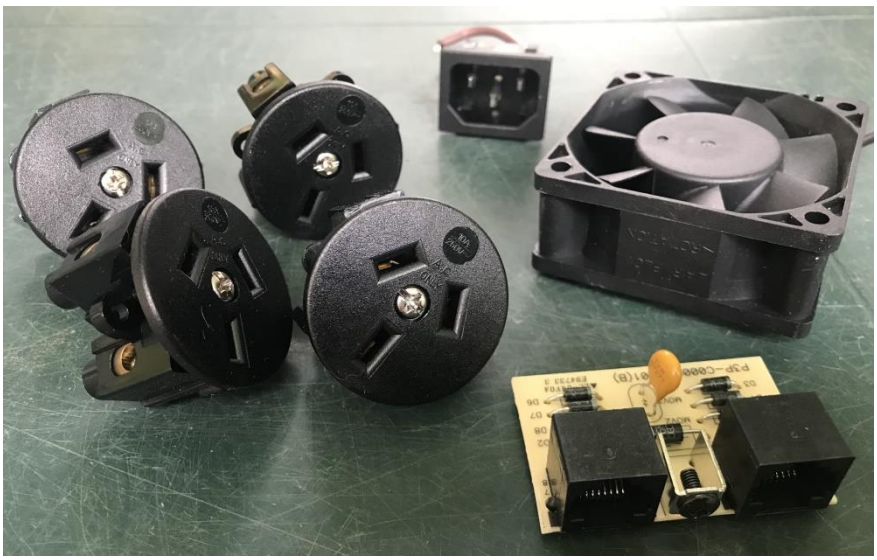
The government is working to bring back the SEC, hopefully this will extend to them inspecting imported junk like was once done, but I'm not holding my breath for that one, like the ACMA inspectors doing something about the RF generating LED lights etc. that are trashing HF.

Now for the ‘spoils’ of that UPS

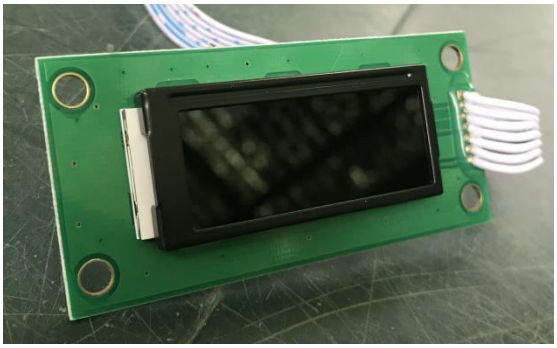


One nice 14.6V transformer that should be good for 60A, given that the UPS was rated to 900W

Although that is probably short term. Near 15V is a tad high, but peel off a few turns and it will be way more useful.



Mains sockets and a fan etc., always useful in the parts box

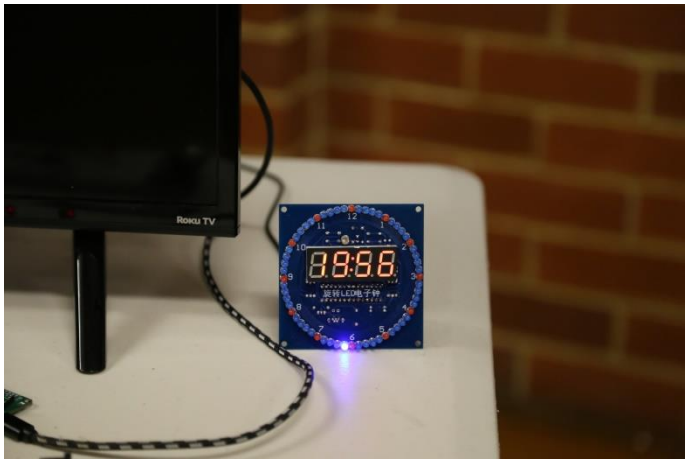


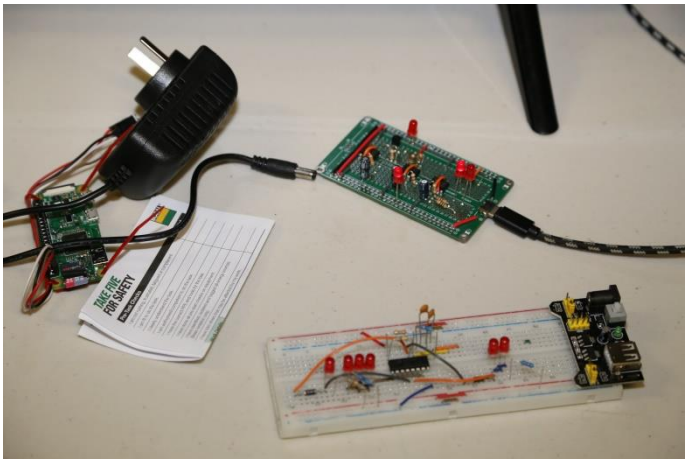
A 3 digit 7 segment LCD display, LED ones are easy to find, whereas LCD 7 segment with controller, not so common, nice.

USB serial interface, as mentioned earlier, ‘Dremmeled’ from the UPS board, Everyone loves USB these days rather than good old RS232 serial, so this will find a use.

Paul VK3TGX

Meeting 17/05/2024





Interesting YouTube Videos

Satellite Hacking Cyberdeck v2.0
https://youtu.be/bSJSktT07bo

John Sethian's Beautiful 2 Rail O Scale Layout
https://youtu.be/y8IvgzZxD_U

WIA Affiliated Club

The GGREC is an affiliated club of the WIA
https://www.wia.org.au/

We also give Thanks to

https://www.jaycar.com.au/

https://www.altronics.com.au/

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		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
All other Club correspondence to: secretary@ggrec.org.au
or via post : GGREC, 408 Old Sale Rd, Drouin West 3818
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