



GATEWAY

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

June 2020



Gorilla Snot Rides Again

Guidebook For Newcomers

More Message Displays

And More

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Note: - club meeting minutes are on the club website

Event Queue

June:

18th VK QRP Club QRP HOURS contest on 80m, 10h UTC – courtesy WIA
19th General meeting – 8:00, [Via video link see page 2 and club emails](#)

July:

3rd Prac night, [Via video link, see club emails](#)
17th VK & ZL Trans Tasman lowband contest – courtesy WIA
17th General meeting – 8:00, [Via video link, see club emails](#)

August:

15-16th RD contest – courtesy 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 - Tony Doyle VK3QX



Hi Members,

As we start to see the gradual lifting of the Covid-19 restrictions we can again envisage a return to physical meetings.

Advice has been received from Girl Guides Victoria indicating that the hall is still not yet available for use. We expect this advice to change soon as the Guides develop guidelines for the hall use and reinstate the hall access agreements.

Once physical meetings are able to resume, it will look different to what it did before Covid-19, with social distancing measures to be in place for the foreseeable future.

With assistance from Michael VK3GHM, the committee are in the process of developing a guideline for members using the clubroom and the guide hall once it is again available.

Be assured that the committee are constantly monitoring the situation and will advise as soon as the situation changes.

The June Prac Night saw Craig VK3FHCC run one of his famous quizzes over Google Meet with 6 members in attendance.

Thanks again Craig for an interesting night (which was enjoyed with a nice red).

Another reminder goes out to those members who haven't yet renewed their memberships. We will be reviewing the mailing list following this month's GM.

I hope to see you all at the GM on Friday Night, via Google Meet.

Stay safe.

73

Tony



<https://meet.google.com/woj-hbss-ogi>

Read the meeting email for more details

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From The Editor – freebies

This last month has been a rather mixed bag here, with several equipment donations coming my way – as in repair jobs etc. that can hopefully be turned into articles for the mag.

Unfortunately submissions this month have been limited to the president's report – plus one from Ian that should have gone into last month's mag, but got buried alive in the regular pile of emails I see here. – Sorry Ian. See the next page (5) for that one.



Recently, I've had a few items passed my way, in particular a tub of 'wires', in there was a Sonos box – Sonos make some rather nice, and a tad expensive wireless speaker systems. Also in there was an Amazon Echo Dot smart speaker. I had been vaguely interested in acquiring either a Google, or Amazon smart speaker, however as I have little that it can talk to, I haven't exactly been in a rush to get one. Especially as Centrecom's current list price is \$69. It's amazing what money some people will throw away these days, I'd be trying my best to get it fixed. For me however even the chance to acquire a set of Google

speakers for 'free' as a bonus for making a particular retail shop wealthier hasn't made me pull the trigger. This Amazon unit did have some issues, however telling it (literally) to do a software update seems to have fixed most of them. A quick Google soon showed the way.

So what can one do with one? The usual response is 'control your house', to many they are the key to having a 'smart house', where you can use them to turn on an off lights, change your TV channel, unlock a door etc. – assuming you have the right, and latest gadgets. I don't have any.

Now there is a way to link in Arduino projects and control them, however I did see some worrying words in the fine print, something about having an account.... That kind of has the alarm bells ringing here – What, I have to PAY to use the things I build – that sucks.

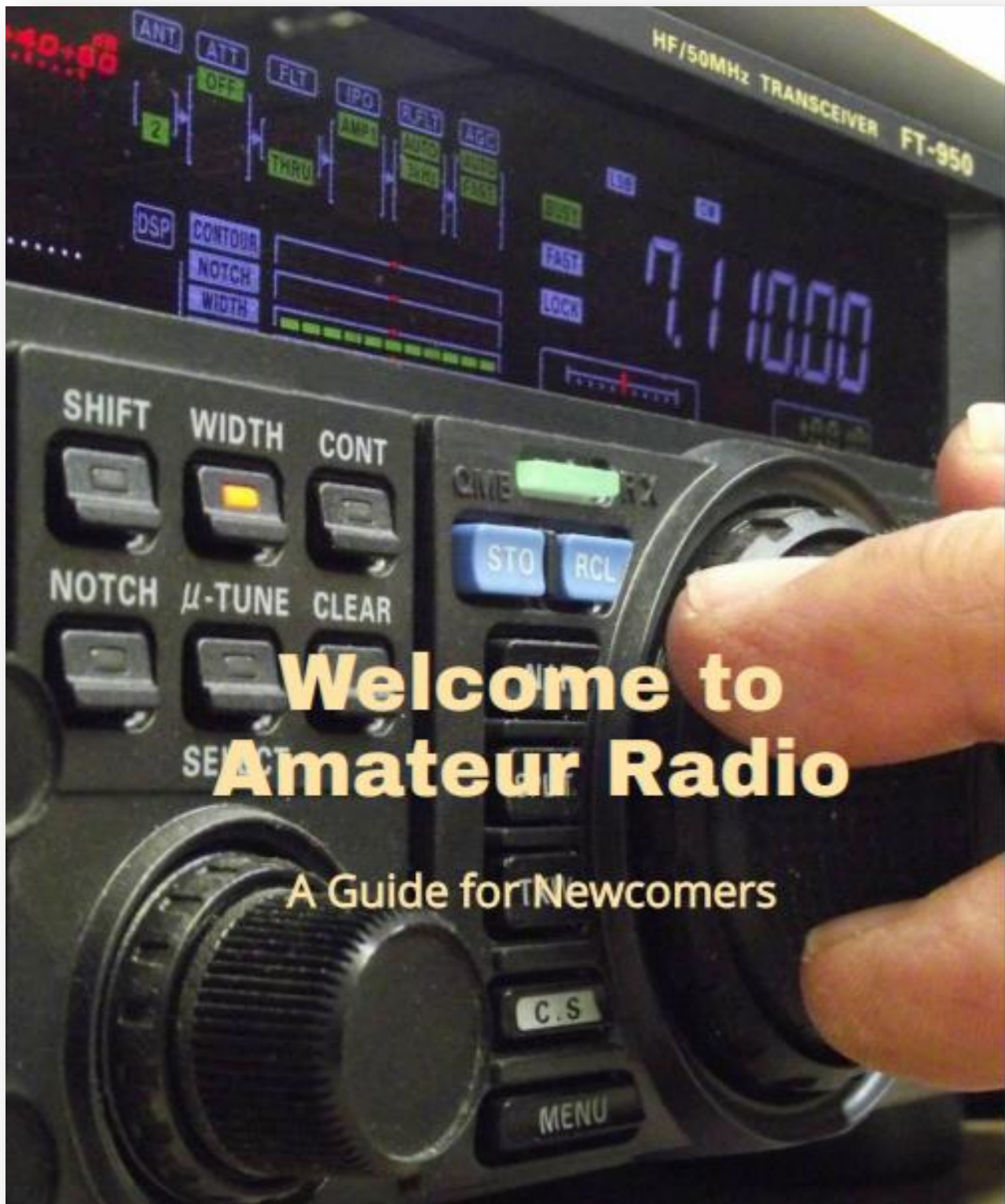
So if anyone has the good oil in how to make one of these things actually useful, then please let us know. (as in beyond supposed smart light globes & switches etc.)

The other job I have been tempted to do it to grab the club's IRLP/Echolink box from Ian and see about fixing its audio problems. Helmut came up 'the other day' and I could barely hear him – not good. I have a Philips PRM8030 that had similar issues and it turned out to be a pile of dried out caps. So giving it a re-cap seems like a good idea. However that means it will be off the air for a week or two, as I don't have the time to do two round trips to Ian's as well as the repairs in short order.

On the other hand there is supposed to be a project to directly link it to the repeater, so recapping a radio, only to have it decommissioned and tossed a few days after fixing it does not exactly appeal to me. So probably I should find out the expected time to completion the current project team have, before getting keen with the soldering iron.

Paul VK3TGX

Guidebook For Newcomers



This week I released a new 35 page book welcoming new operators to Amateur Radio. It is a free download book available as a pdf an epub or mobi for kindle users.

It is available via the following link:

<https://vkradioamateurs.org/welcome-to-ar-guidebook-for-newcomers/>

Ian VK3BUF

Gorilla Snot Rides Again



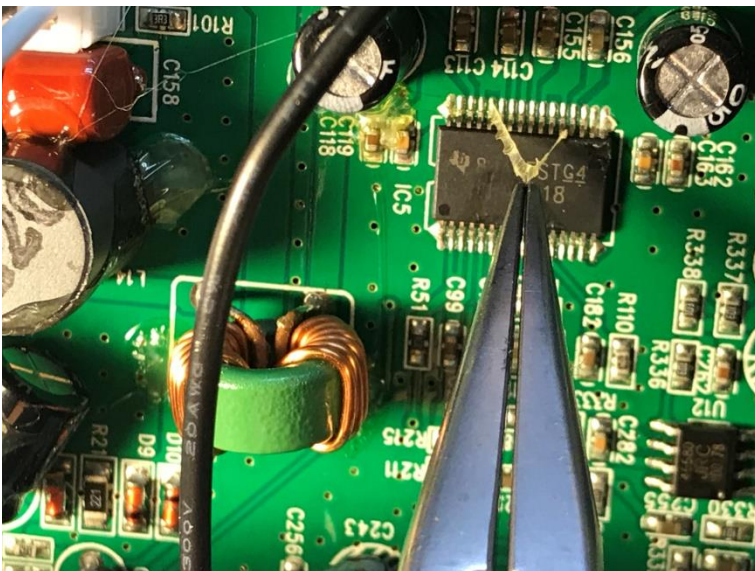
Recently, I was handed this powered speaker, it has a brand name of 'Party Speaker', a rather odd name, or maybe not as there seems to be a great stream of companies trying to suck us in by calling themselves "My perfect ...", or "Super...." etc. etc.

Anyway, the previous owner had attempted to repair it as the top two screws were missing and there were gouge marks on and around the power switch. Obviously he didn't have a long screwdriver as he had skipped a pile of deeply recessed screws and had given up trying to open it up – probably an advantage to me.

In the end, the power switch was actually faulty, and a bit of a pain to remove, however I didn't have a suitable replacement, so I just used some contact cleaning spray, applied through one of the above mentioned gouge holes – so his rough efforts actually proved useful, although a 1mm drill would have been a lot more discreet.

I have seen many an item where the owner has blamed the power switch, and subsequently punished it into oblivion. *'If I can just hit the switch hard enough it will surely turn on'*. This one been a rather odd exception.

However, after sorting out the switch, it still wasn't switching on. After the switch is a FET, driven I assume by the main micro (well the one on the amp/power board). So a short length of wire soon had that bypassed, and all came to life - rather surprisingly, I would have thought the micro would spit the dummy and cause all sorts of grief now it had lost power control. I was kind of tempted to leave it this way, however there was good reason to fix this extra fault as the system had a small 4AH lead acid battery, and now it had no over discharge protection.



Anyway, whilst looking over the power/amp board, I noticed quite a bit of that light brown glue here there and everywhere, so I started to pick at it with my needle nose pliers - and surprise surprise, the power control circuits started to behave themselves again.

Obviously it must have been affecting what the micro was seeing, making it think the battery was flat, and so refusing to let it power up.



What was more surprising was that a fair amount of the glue looked very fresh; I've grown accustomed to seeing it a lot more aged and harder, this stuff was incredibly pliable.

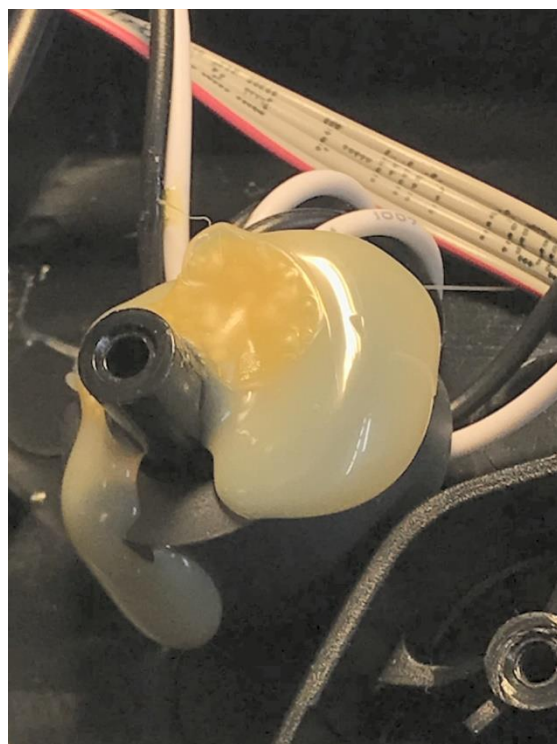
Later on, I found out why, after unscrewing the cover to the battery compartment, there I could see a date sticker on the battery that read '04 2018', that (I assume) being the date when the battery was fitted in the factory (or maybe the battery manufacture date). Anyway at this time the speaker was still in China?. So allowing for shipping and local retail etc., how long had it being in the customers hands before it failed? I've heard of short product lifespans, but this is absolutely ridiculous. Many years ago I joked about the idea of cars being sold with sealed petrol tanks, when it stops, time for a new car. Well it looks like the electronics industry is on that crazy wavelength.

And boy was there a lot of glue in this device; however a lot of it had no direct contact with any bare circuit boards etc., like this blob holding a ferrite noise suppresser in place around a plastic post.

So I left this glue in place, however what is interesting is the yellowing spot on the top, so is this glue experiencing some form of rapid chemical decomposition? It's lucky to be two years old and it's showing its age already.

It will be interesting to pull it apart in a few more years and have a look to see how this glue is fairing.

Hopefully it is not outgassing, and posing a threat to any of its surroundings.



Or does the issue run deeper? I recently watched a YouTube video by Franlab about old equipment in storage that is outgassing so severely that it can all but knock you out if you get a whiff of the stuff... scary – in that and the stuff we cannot smell, and what is it doing to us.



Big Outgassing Problems Of Old Plastics

Fran Blanche • 22K views • 1 month ago

Any suggestions? Leave a comment! Are you a conservation expert? Then let me know some tips on storage. Any stories to tell?

<https://youtu.be/f4IfUeMheH8>

Many years ago I worked with a bloke, whose wife was so affected by the outgassing of plastics and paint that he had to go to extreme measures, including no plastic in the house what so ever. I think she watched TV through a glass panel, and he had a specially converted car where the back seat had been removed and replaced with a massive filtration system so she could breathe. I believe they were in the outer suburbs, but were planning to go bush for better air.

----- oooOOOooo -----



IMG_0864.MOV

These problems however were not the end of this speaker's issues.

When I received it I noticed it had a bit of a rattle about it – boy was I shocked when I opened it up and found out what was rattling – it was the bass driver's magnet.

I made a very short video clip of it that I've posted on my Facebook page, and then onto the GGREC Facebook page, however for some reason it's being deleted from the clubs.....

<https://www.facebook.com/pastubbs/videos/10222711165956157/>

The driver is a 3 ohm unit, and I know from past experience changing it to a different brand etc. was going to quite markedly affect its sound – so I tried something a tad radical, and went about 'repairing' it.



The speaker had obviously been very roughly handled, to the point that the magnet assembly was pulling free of the basket. How the plastic case, or the somewhat heavy battery survived this abuse, I don't know.

Anyway with nothing to lose, I clamped it back together in my vice and ran a thick bead of Sikaflex construction adhesive around the gap between the basket and the magnets. I then added a layer of plastic insulation tape so that I could need the thick sticky goup into position.

It was extremely tacky and I could not touch it without is sticking to me, with me ending up with more glue than the speaker.

Did I seriously expect this to work? – Not really, it was bordering on an experiment into stupidity.

Good I had an almost used up tube of Sikaflex on hand, as I probably wouldn't buy one for it.

Later on I bent up an aluminium strap to further brace the back of the driver – it's at this point that I found a possible reason for the driver's woes, the basket was made of extremely soft metal, my drill went through it like it was made of butter – or was it aluminium, surly not. *Yuk!*

Maybe I should have taken a pic, but it was looking a tad 'stupid' so no. And would I pass this back to someone as a valid repair – No way, it was just for a bit of fun, after all the magnet alignment will surely be out, and the voice coil will rub up against one of the magnet poles causing much noise, and later on, destruction. Boy was I surprised when it actually worked!

The bloke who gave it to me, not the original owner, had indicted it may be useful for its knobs – so he wasn't expecting it back. This bloke, a musician, loves doing the rounds of people who collect junk and try to unload it by various means, (plus we currently have an ongoing council hard rubbish collection) so who knows how he, or they came by it.



As it was now a potentially useful device, I added a few personal touches, like an Anderson powepole connector, hanging out the back of the speaker's rear acoustic port, so I have direct access to the battery. Now I can easily integrate it into my camping/radio gear – Antennapalooza?

I also added a line level out jack so it can be teamed up with more serious audio gear.

At this point I became aware of the awful audio shenanigans that go on inside these 'modern' speakers. They don't actually build good sounding cabinets for these, no they make something that looks about right, then they bung in what looks like the right drivers, and then run

the sound through an audio DSP (digital signal processor) to make it sound just the way they want it – as in thunderous bass etc. Haven't you noticed that on these speakers, it usually does not matter how far you crank up the volume, they never clip or sound 'distorted', (*ha!*) compared to how your stereo system of yesteryear sounded when similarly abused. The same thing is done in modern smartphones to eke out every last decibel from the ridiculously small drivers in them. The audio amps are run to within a millivolt of clipping, then the DSP modifies (compressed & limits) the audio so it sounds progressively louder as you turn up the volume, without the output stages actually getting any closer to, or going into clipping.

As for poor audio, just look at this audio path. It starts with a mostly digital source, Bluetooth, USB, or a 'digital' FM. The first two being lossy compressed in the first place. This is then converted to analogue. From there it goes through a conventional audio volume pot. (Where I pinched my 'line out' signal from) It then gets digitized by the DSP for all the audio trickery as well as basic tone control, mic echo, and sub Bass filtering etc. After that it is again turned into analogue, 3 channels now, before being passed off to two stereo digital (class D) audio amps. One amp provides 15W a channel into the two midrange/treble drivers. The other is wired in bridge mode to give us about 20W of mono bass drive. What a tortuous path, NOT Hi-Fi at all.

One weird outcome is that this speaker is unable to produce low level audio, it just mutes itself, so for around the campfire at Antennapalooza ok, but useless for a quiet caravan park. Maybe the DSP's D to A converter lacks the resolution for low levels, so they just don't try.

So back to my home grown Bluetooth speaker – pity the bass sucks.

Paul VK3TGX

Interesting YouTube Videos



Will Computers Ever Think Like Human Beings? - with Vint Cerf

<https://youtu.be/J63mKverb8w>

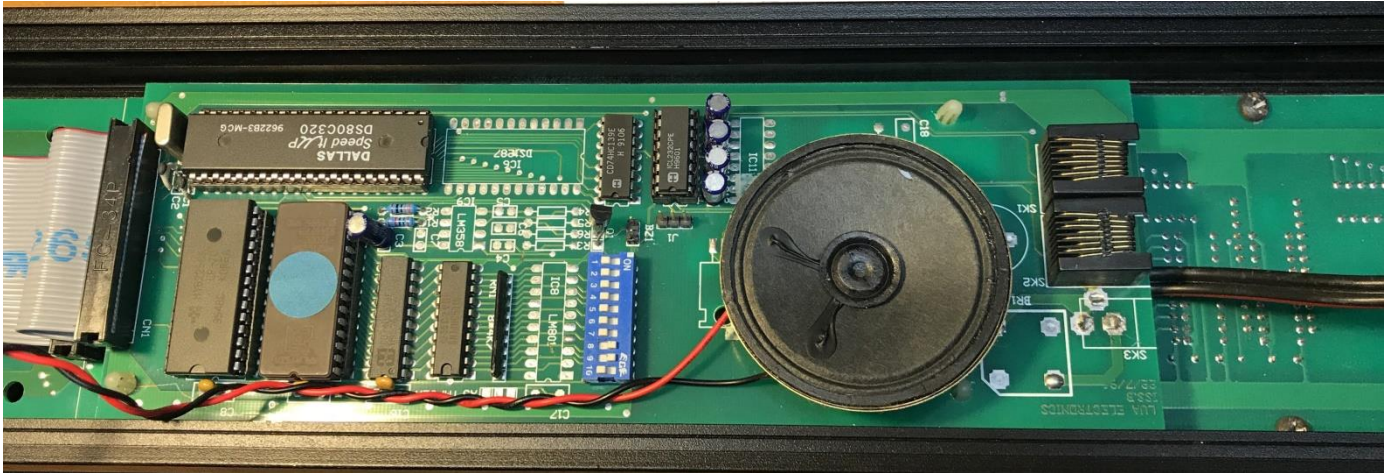
And now for something completely different (I think Reg would have liked this one)



Covering a car with 300 LED headlamp bulbs

<https://youtu.be/UPG8qZD387o>

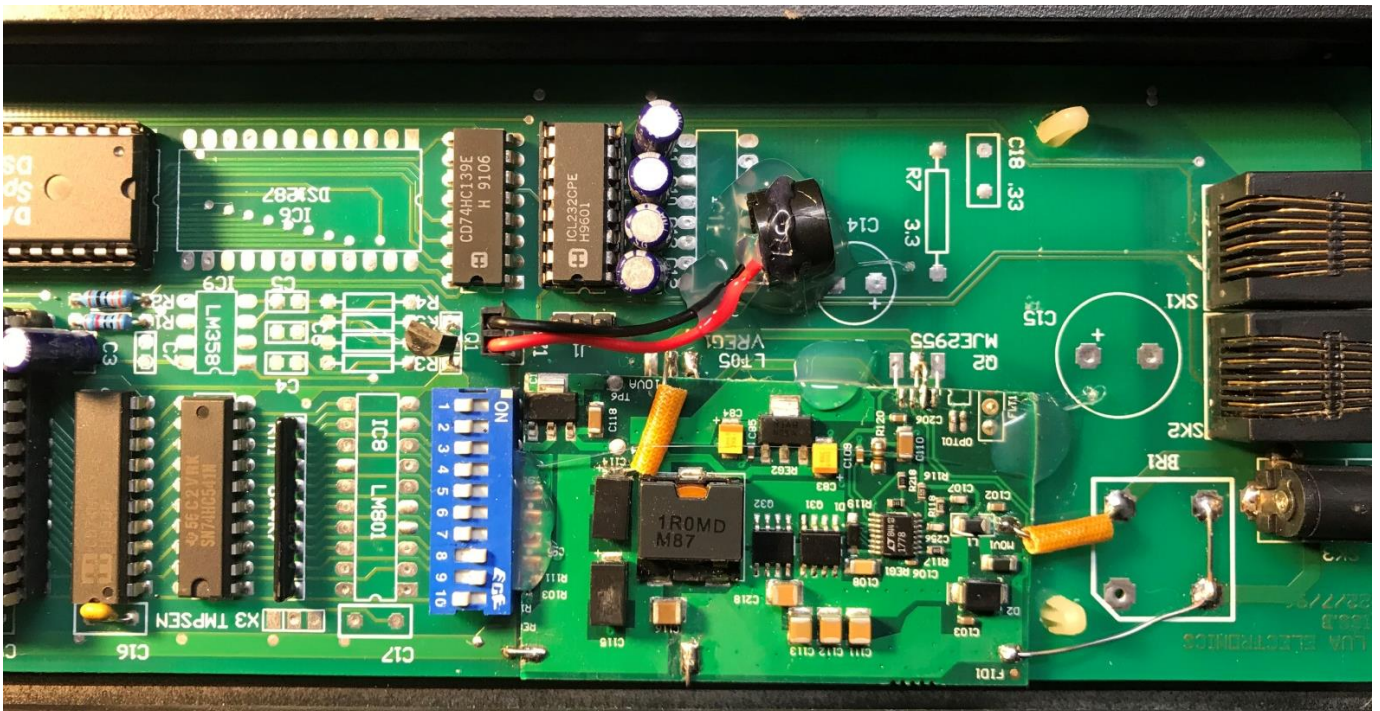
Moving Message Displays



A bit of an update on my LED message display project.

One bad idea one of them had was running many amps of 5V DC – potentially 8A, through one of those tiny barrel connectors, the type normally found on 1 & 2 amp plug packs.

At these currents, any small problem in the connector will cause trouble – my first crude solution was to simply remove the connector and hard wire in the supply. Yes it works but it is a tad inconvenient. And every time I had trouble I couldn't help but think "Is it the supply again"



A much better solution is to fit a small switch-mode DC-DC converter, this one supposedly good for 8A, was literally hacked from another board with tin snips and popped in here where the speaker was – the speaker being replaced with a miniature one, that strangely sounds near identical. Now the display runs from a 12V supply, and variations of a few volts don't bother it, unlike 5V which needs to be plus or minus 0.25V, with minimal noise, for it to run properly.

Similar supplies are readily available on the internet, and are a much better option than using a high power 5V plug pack. Put one inside your gear, and then run it all from a higher voltage plug pack etc. Everything should now run a lot more stably.

Paul VK3TGX

Prac Night by Google Teleconference

Our last 'prac night' was turned into a quiz session – where were you if you missed it, much better than watching repeats on the TV.

QUIZ RULES
The Quiz Master is always correct, even when he is wrong
No Correspondence will be entered into. The Quiz Masters' ruling is final and absolute.
The Quiz Master is however open to bribery

Question 7 Electrical
a) [Photo of a resistor] 1) [Circuit symbol for resistor] w) LED
b) [Photo of a capacitor] 2) [Circuit symbol for capacitor] x) Inductor
c) [Photo of a transformer] 3) [Circuit symbol for transformer] y) Transformer
d) [Photo of a crystal] 4) [Circuit symbol for crystal] z) Crystal
Match the photo to the ISO symbol and name e.g. a, 1, LED

Question 9 Science
What is this?
a) Chemical analysis
b) Capacitor
c) Mechanical Computer
d) Radio Transmitter

Question 11 Electrical
[Diagram of a carrier wave and a modulated signal]
What Modulation is displayed below?

Question 28 Science
Tape Formats
1 Digital Audio Tape
2 Compact Cassette
3 8 Track
4 Digital Compact Cassette
5 Elcaset
6 Micro Cassette

Question 34 Science
a) How far can lightning strike in front of a storm? 1) 2Km, 2) 10Km, 3) 40Km, 4) 80Km
b) What lightning is shown in the photo?
c) What voltage is lightning bolt 1) 100KV, 2) 1MV, 3) 100MV, 4) 18V, 100BV
d) What current is in a lightning bolt 1) 10mA, 2) 10A, 3) 1KA, 4) 10KA
e) There is a rare and little understood type of lightning, what is it called?

A big thanks to all those involved.

Meetings by Google Teleconference



See you, this Friday...



Club Information



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

Office bearers

All physical meetings suspended due
to the coronavirus restrictions

| | | | | | |
|-----------|----------------|---------|------------------|--------------|--------|
| President | Tony Doyle | VK3QX | Web Master | - | - |
| Admin Sec | Rob Streater | VK3BRS | Magazine Editor | Paul Stubbs | VK3TGX |
| Treasurer | Robbie Xin | VK3FAMT | Property Officer | 'committee' | |
| General 1 | Helmut Inhoven | VK3DHI | Assoc. Secretary | Rob Streater | VK3BRS |
| General 2 | Leigh Findlay | VK3FACB | | | |

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 434.475MHz Out 439.475MHz CTCSS 91.5Hz
 VK3RGW Repeater supports Remote Internet access (IRLP), Node 6794.
 70cm Repeater Seaview VK3RWD, In 433.575MHz Out 438.575MHz CTCSS 91.5Hz
 Simplex VHF - 145.450MHz FM, Simplex UHF - 438.850MHz FM
 VK3RLP Beacons 1296.532MHz & 2403.532MHz (currently inactive)

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
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