GATEWAY

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

January 2024

Toshiba Amplifier Repairs

High Bay LED Lights

LCD Panel Woes

And More

WIA Affiliated Club

Cover photo, Christmas raffle.
(If you have any good photos, please send them in)

Contents.

Event Queue

.

January:

19th	8:00	General Meeting
26th.		Australia Day at Ian's – see page 6
26th.		Australia Day Contest - WIA

February:

2nd	7:30	Prac night
16th	8:00	General Meeting
24 & 25th		New Zealand's Jock White Memorial Field Day - 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 Jan 2024

Hi GGREC members. Back to reality for another year. Having just had a Christmas break and having discovered that you only did half the things that you had hoped to achieve, put your hand up if you want another Christmas break straight away. Yes I thought so. You can put your hand back down again now. You're freaking out others in the room who don't know what you're reading.

In December we had a pleasurable breakup function in the Guide Hall, while it rained nastily outside. That was quite a success. For January we looked at conducting a DF hunt, somewhere in the Gippsland direction for Australia Day, but we couldn't get sufficient commitment to make it worthwhile. We went with Plan B, which was to have a spit-roast BBQ on Jan 26. This seemed to have been what members are looking for as 28 persons have RSVP'd so far. The 12 x 12 metre pavilion we use for Antennapalooza has been upgraded and set up at my QTH in Drouin West in the top paddock. So we are trying it out on the 26th for shade and shelter. Maybe bring a Frisbee. There is plenty of parking space and tree-shade in that area. Details of this have already been circulated. I hope that the weather will be reasonably kind to us.

We did have a speaker lined up for This Friday Night, but unfortunately that has to be postponed for a while. We needed another Plan B. This got me thinking. We are now in 2024. What was Radio doing in Australia in 1924? Back then laws had been passed to serve the private monopoly of AWA to force all receivers to be tuned and sealed in the factory to one radio station only. Want to listen to another AM radio station? Buy another radio and pay another (expensive) receiver license fee. It was a blatant money grab and perhaps not a coincidence that Billy Hughes, the then Prime Minister was simultaneously a Director of the AWA company.

Anyway, as Australians do, we universally agreed that this arrangement sucked and in 1924 the sealed radio concept was abandoned. One of the key players in radio at that time was Mrs Violet McKenzie, Electrical engineer, radio amateur and pilot. I have dug up a series of slides on this era, so this Friday Night you will see a bit more about how Amateur Radio got off the ground in Australia thanks to the relentless efforts of this woman. It is also a good chance to try out the Club's new video projector.

We also purchased a replacement amplifier and wireless microphone. Another useful bit of kit. Members may have noticed that the committee have installed cameras and a video recorder to increase security around the shack. New signs have been put up to remind passers by that the venue is now under surveillance. It was not a step that we wanted to take, but it was necessary.

The other big thing is that all existing licensed operators have been getting letters from the ACMA informing us of the impending shift to a Class License on Feb 19. This is a pretty big deal for all existing Amateurs, who are to have no more license fees ever again. All prospective new operators should be facing a cheaper entry into the hobby too. Let's hope it all works as expected.

That will do for now. The only thing between me and a small glass of port is this last paragraph.

Cheers, Ian VK3BUF

Photo by Ex-Wrans Association of New South Wales - http://www.dictionaryofsydney.org/item/56945, Public Domain, https://commons.wikimedia.org/w/index.php?curid=17403218

From The Editor

Well welcome to 2024, I hope you have a good one. I kind of felt like nature was trying to eject me from 2023 with two lightning events, However 2024 has not started off that well with all the rain we've been seeing. Whilst I was personnally spared, my church was not with two roof breaches.

I was kind of thinking about making a Christmas edition of the club mag, however other things got in the way, plus I didn't want to pester Ian. I had an idea for an article on modifying solar christmas lights to run off the AC mains, so I'll have to re-word that one to remeove the christmas twang that would have been present.

And now for my repeat 'fun' (NOT) event of an extension lead trying to burn me by ejecting very hot crap (copper & carbonised plastic) onto my hand. (lukily no scars)

I was dooing my regular gardening session as greenwaste bin night was rapidly aproaching, and bang. I felt a jet of hot crud hitting the back of my hand. This is the second time I've had this happen. I tend to hold the lead fairly close to the receptical to both stop the plug from coming out as I work, and also as a way to be able to quickly pull the plug should things start to go west, like I trip over something, I tend to not want to hit the ground with a live and probably running power tool in my hands. I once had this happen when trying to remove a shrub, I went down holding a small axe/hatchet, I didn't care about the falling over bit, all my attention was on loosing that axe before I hit the ground. Landing on anything sharp is not a good idea.

So maybe I should not be holding it so close to the socket….

So much for 'safety switches', I was never really happy when they renaimed earth leakage switches to 'Safety Switches', the old name told you what it did, and knowing that you'd know they would be of little use in this situation, But no, the brainiacs had to rename them to something that only tells you they are for your safety, DER, more dumbing down of things.

Then came another surprise, a rather melted and destroyed cable, normally one would associate that with way to many amps etc, but not in this case, the lead is from a 700mA 5V USB supply, a supply I would have thought intrinsically safe (apart from the switchmode bit blowing up) due to the flea-power involved, oh well I better reset my thoughts, a circuit breaker/fuse could be usefull on a 3.5W supply – surely not….

Paul VK3TGX

Notices

QSL Cards to the Russian Federation (UA)

I just inquired with Amateur Radio Victoria about the QSL to and from Russia UA, as there is still the postal embargo of the Australia Post in place and no postal services exist sending or receiving mail to or from Russia.

The message is hold your UA QSL cards until the issue may resolve.
Amateur Radio Victoria is our QSL service WIA members use.

73 de Klaus
VK3IU

==========

Australia Day BBQ

Dear Members and Friends,

We extend a warm invitation to all members and friends to join us for this year's Australia Day BBQ from around **Midday on Friday the 26th of January** at Ian's VK3BUF property in Drouin. We are grateful to Ian for generously offering his QTH and expansive marquee for this event.

Family and friends of GGREC are welcome to join our BBQ Day.

Fred VK3FWR has volunteered to organize and prepare a delicious spit roast. The club will contribute by providing salads, bread, sauces, water, and soft drinks. Additionally, there will be a BBQ available for those who prefer to prepare their own food.

To help offset some of the costs incurred, we may request voluntary donations from participants on the day. Around $5 per person should be fine. Rest assured, the club will cover any remaining expenses.

Kindly bring your own refreshments, chairs, cutlery, cups, and any other personal items you may need. **Tables will be on-site.** If you have specific dietary requirements, we encourage you to bring those provisions with you.

To ensure we make the necessary arrangements for a fantastic day, please RSVP by 21th of January at field.days@ggrec.org.au .

We look forward to celebrating Australia Day together in good company, enjoying great food and camaraderie. Thank you for your participation and support.

Best regards,
GGREC Committee

Toshiba Amplifier Repairs

I don't normally associate Toshiba with HiFi, or any audio for that matter, I used to mainly think of them as a computer company, with their many laptops.

This unit comes courtesy of my brother; he said it appears dead, although his tests were limited to plugging it in and turning it on with nothing connected. The meters didn't jump or light up so hence his summation. When he first described it to me I thought it was a professional or commercial device as it had only one set of inputs and very limited controls. Actually it's more aimed at the higher end consumer audio as it's meant to be teamed with a preamp, something not normally seen in everyday HiFi.

Here is a picture of it, a SC330, along with its matching SY330 preamp, I found this pic on the web, unfortunately my brother did not score that preamp with it, pity.

However he does have a Luxman preamp.

It cleaned up really well, the faults were a blown output fuse on one channel, very scratchy pots and two blown dial lights.

The pots reacted quite well to some contact cleaner, the fuse, well someone must have given it a hard time? Used it as a party amp?

Well that's what I initially thought – see the end for the smokey truth

With it loaded up into my 8 ohm dummy load I got near 57W continuous out of it, not bad for an amp rated for only 38W – Hifiengine https://www.hifiengine.com

Specifications

Power output: 38 watts per channel into 8Ω (stereo)

Frequency response: 5Hz to 80kHz

Total harmonic distortion: 0.1%

Damping factor: 25

Signal to noise ratio: 95dB

Speaker load impedance: 4Ω (minimum)

Semiconductors: 16 x transistors, 22 x diodes

Dimensions: 450 x 97 x 245mm

Weight: 5.5kg

Year: 1977

What surprised me the most was the dial lamps, when I powered on the amp I noticed a fair amount of heat rising from the front area, it turned out to be from a 5W ceramic resistor that is pretty much always dissipating 3.3watts, that 220 ohm resistor is feeding a 12V Zener diode from the main 38V supply. The whole point of this is just for the dial lamps – kind of crazy.

Obviously these lamps had previously failed as someone had replaced them and just twisted the wires together and applied some black electrical tape, no sign of any solder.

I currently have an oversupply of white LED's courtesy of a dead set of Christmas tree lights, so I used two of these and rejig'd the supply. I just lifted one end of that Zener leaving that current sucker cold, then wired the two LED's in series fed by two 1.5K resistors, two to spread the heat. It's nice to leave as much of the original circuitry as possible in there, as you never know what may await this amp in the future, give the next soldering iron jockey all the options rather than ripping bits out and throwing them away.

What were they thinking? Surely they could have wired the two lamps in series, that would have halved the current draw and dropped the resistor voltage by another 12V, so WAY less heat. The other option would have been a dedicated filament winding on the transformer.

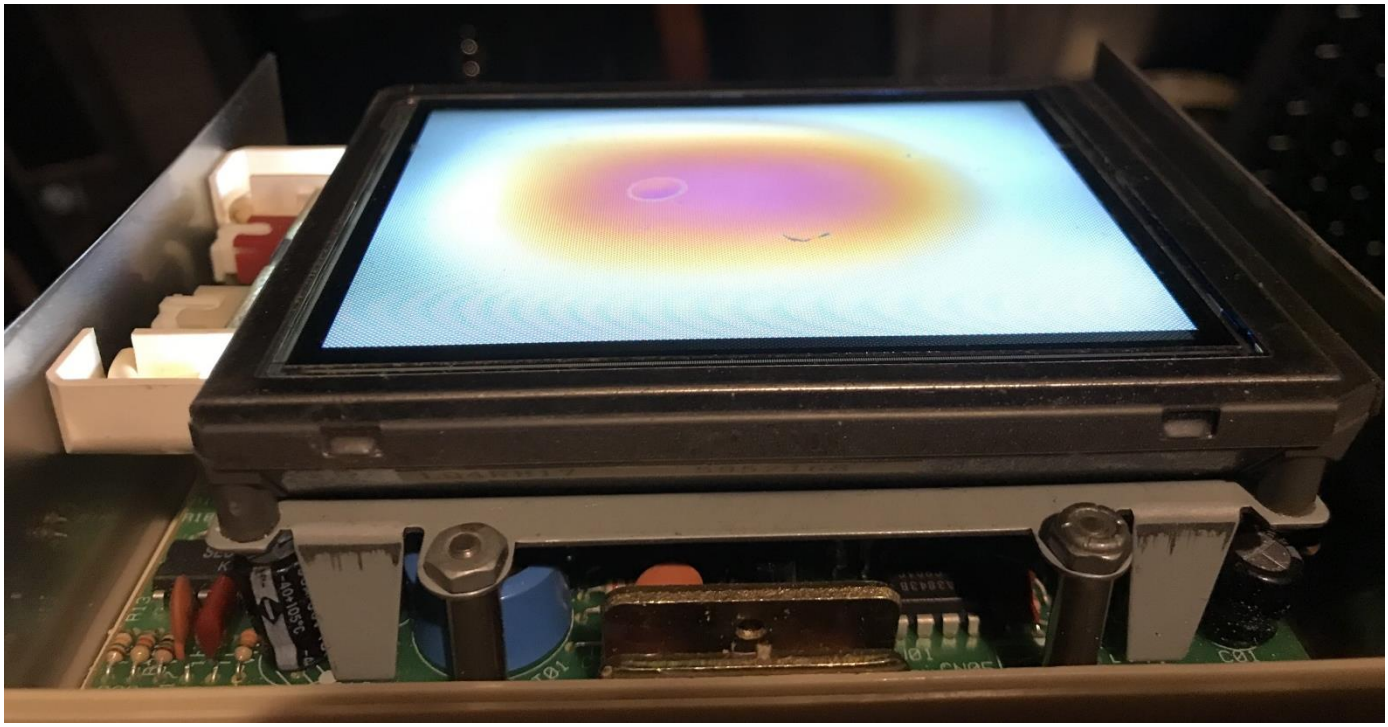
Using a big fat resistor seems so 'back yard expert' to me, especially given all the options available to a mass manufacturer.

Anyway, I thought I had this one all sorted, except it now has a bad crackling sound it the left channel, I connected my scope, the spikes extend all the way to the negative 38V rail, yikes, pity I didn't check earlier with the scope as it quickly destroyed a low power test speaker.

I initially thought this was just more crackly pot woes, wrong - it looks like there may well be a part 2 to this amplifier's story.

Paul VK3TGX

LCD Panel Woes



Many moons ago, Ian found an ad for some colour LCD displays that accepted composite PAL video, so I asked him to order me one. Unfortunately it turned out to be a bit of a dud, with way less resolution than standard PAL video. Anyway I went to use it the other day to test out a video camera, only to find it has developed a large coloured spot in the middle.

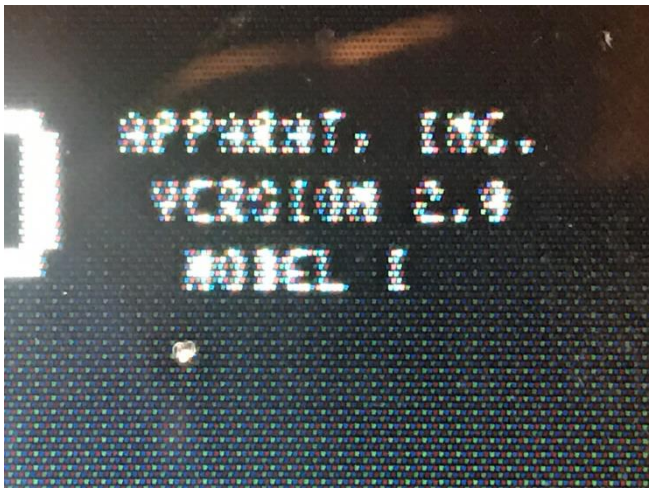
It's not quite as bad front on, I've played with things a touch here to make it stand out, with a colour movie etc. it's a lot better however with a solid black background from my old Tandy TRS-80 computer it's somewhat awful.

Below is a Digitor colour TV (Dick Smith Elec) that also has issues, it kind of looks like a bad protective film that's peeling off, however I've had it apart, no, it inside the actual LCD. I have a second one of these TV's, its fine, so far. The bad one spent ages in a protective travel case, I wonder if there has been some form of chemical interaction, although it has not affected the case or display cover

I used to kind of dread CRT displays, as any fixed image will eventually burn itself into the phosphor and the only fix is a new tube.

However these LCD woes seem far worse, give me a CRT please.

Back in the CRT heyday, there were companies out there that could pull apart a CRT picture tube and repair it, fit a new electron gun assembly, and even recoat the phosphor screen, even change a B&W tube into a green screen for a computer or terminal.



Unfortunately your LCD options are usually limited to fixing busted backlights.

Those days are long gone, which is a pity as there is now a fair few people who are into restoring old TV's (and radios). Unfortunately dead or weak picture tubes are a big problem. Whilst round screen TV's were all but unknown in Australia (apart from hobbyists using radar tubes etc.) I'd kind of like to get one from the US, as they are so different. (B&W, not NTSC color)

Anyway, getting back to my first LCD and my gripe, have a look at these two pictures, as you can see the top one is all but unreadable, kind of making that LCD all but useless to me. The old amber CRT in the lower pic is light years ahead. This computer is only 64x16 imagine it on 80x24.

Getting a small LCD that can display a PAL signal to its full resolution is kind of hard. A modern largish TV is fine, however as the screen size drops so does the panel resolution, no iPhone retina style displays in this market.

If you want to use a smaller screen with a retro computer that outputs composite video, then you're probably better off getting an LCD designed for a laptop, then using an adapter to convert the composite to VGA, or HDMI. Then use another kit that can turn a laptop LCD into a HDMI, VGA display. If you're lucky you could find a kit that goes all the way from comp to direct LCD drive. There are also smaller screens intended for the likes of the Raspberry Pi etc. same issue, HDMI, you'll need an adapter

There are a few projects out there to convert various old computers, like the Commodore 64 into a HDMI box, as composite displays are a dying breed, especially if your favourite display comes from a computer shop, rather than a TV shop.

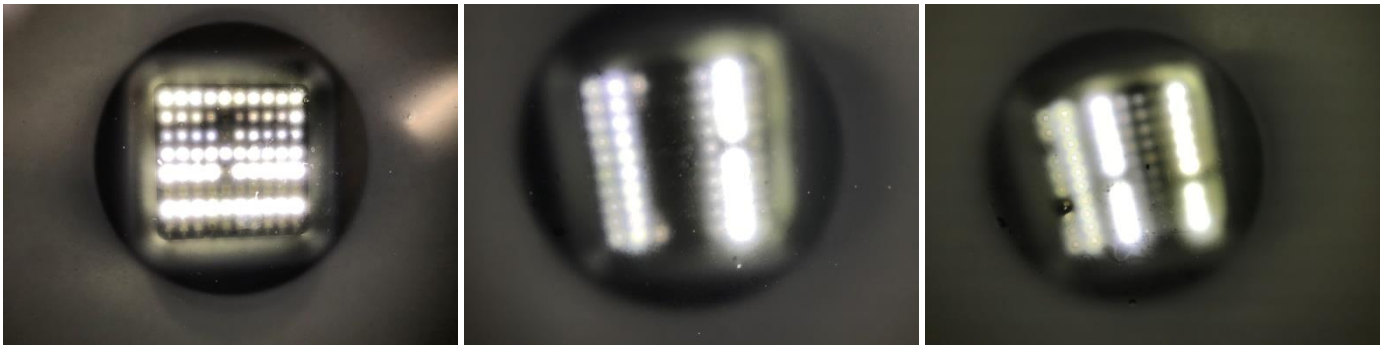
I have a small screen digital TV, complete with HDMI, yet it's far from 'full HD'. Not so long ago our kitchen TV started dying, I had fixed it a few times, however there were more and more free to air channels that it could not receive, as the so called digital TV standard has been revised a few times, adding extra codecs so they can get more from less bandwidth. (Beware if you go to 'trash & treasure' markets, most TV's are there because of this issue) We replaced it with an Android smart TV (Aldi), it has most of the new bells and whistles, however the display panel in it is only 720p, not the full 1080. So it'll probably be horrible as a computer display.

It seems the TV market is split into two camps, big 4K and better, or cheap'd nasty with low res panels, pity.

Paul VK3TGX

High Bay LED Lights

High bay lights are usually reserved for factories and other places with really high ceilings /roofs. You've probably bumped into those door to door sellers offering to upgrade your household bulbs to LED ones, all free courtesy of the government with their various going green / climate change campaigns. Well the same is going on in the industrial scene. My brother, Mark, works as a grinder in a workshop, usually making or refurbishing dies for plastic moulded stuff. They had all their lights changed a while ago, however they are not the best with a fair few failing. He scored a few and asked me if I'd like to take a look.



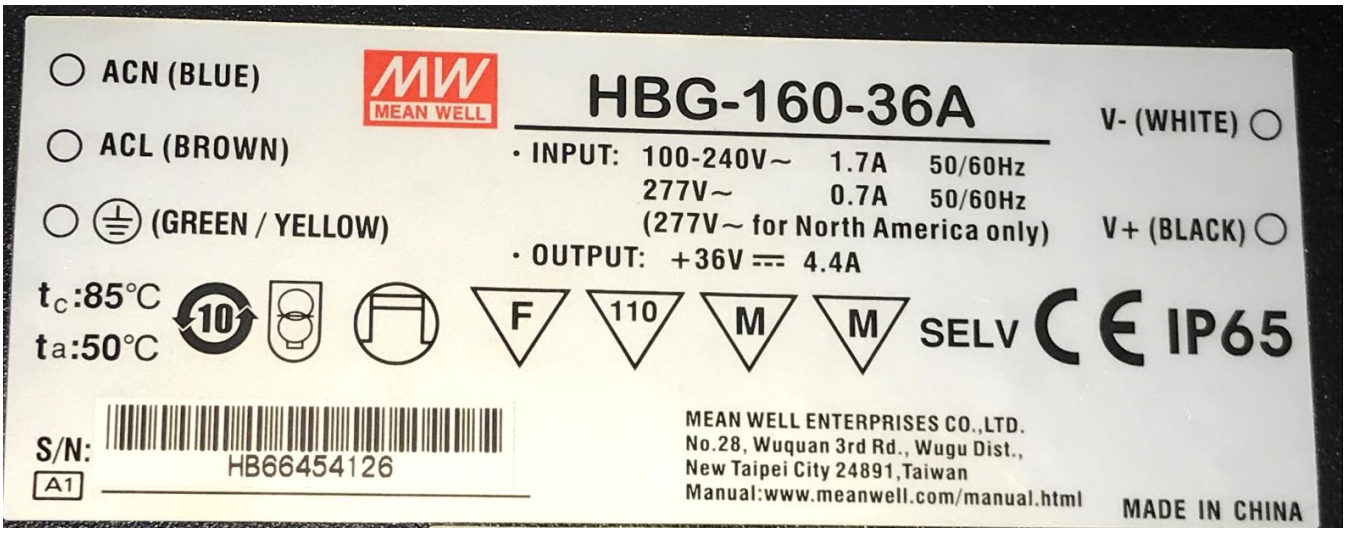
This is what the LED panels look like, as you can see they have really been toasted, they've been pushed so hard it's not funny. Sorry for the not so great pics, my camera really didn't want to image these. (as in I received 3 of them)

So what's inside?

This is a more or less side view, they come it two pieces, you can probably spot the socket screw holding the upper power supply to the bottom lamp & reflector assembly

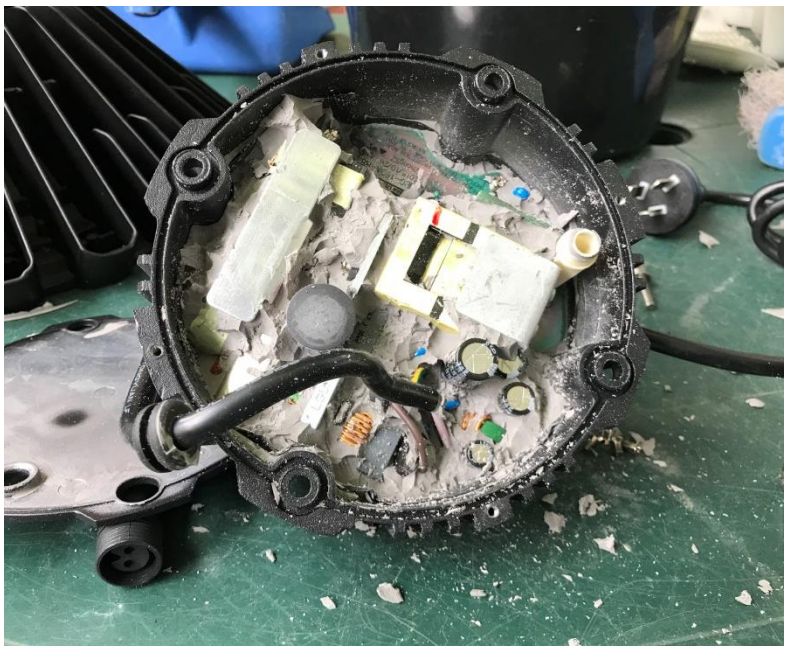
I was rather surprised by those screws, they were all but finger tight!

There is actually a plug and socket, nice. However no sign of any feedback for LED derating.



A Meanwell power supply, Meanwell seem to be making a good name for themselves.

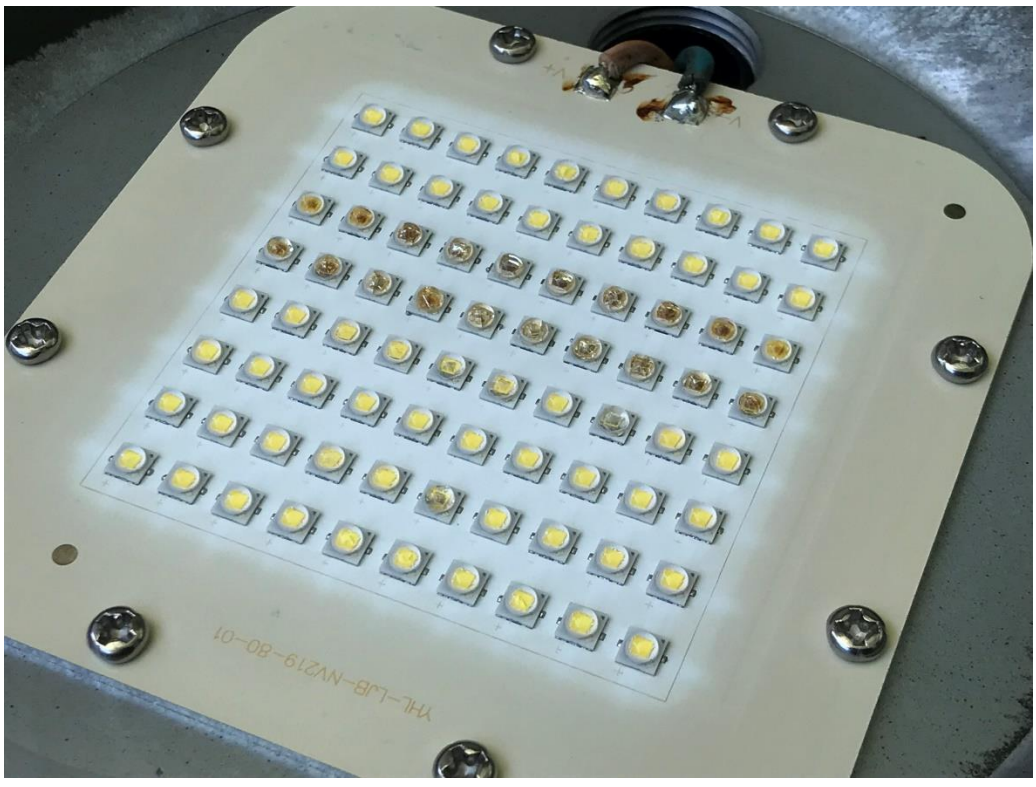
Trouble was when I removed the lid I was greeted by a sea of grey rubbery compound, I had great fun digging my way through all of this.

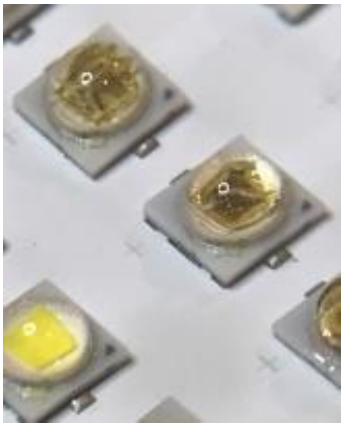


There was actually some weight to all this rubbery stuff.

Unfortunately all their nice work has not lead to a super reliable light. I'm accustomed to LED displays that last years, i.e. the good old bedside clock, I've never disposed of one because of a failed LED. In electronics I was trained to derate things for reliability and long life. Components usually come with graphs etc. showing how hard you can push things at a certain temperature, and to back off as it rises. However with LED lighting this all seems to have been thrown out the door, push 'em hard, don't worry, the customer though disappointed will not go to the opposition because they are doing the same thing. Even in super expensive gear like cars, blown LED's are common.

So I looked further and was shocked by how badly the LED module had been thermally bonded onto the heatsink, it was only making contact on the edges, the centre of the module does have thermal paste, however you can still see the original brush/applicator strokes, that part, where most of the LED's reside never made contact with the heatsink. It's amazing it lasted as long as it did. Now check out those LED's, boy have they been baked.





Paul VK3TGX

Christmas 2023














ICOM


ICOM

Interesting YouTube Videos

30,000 Households disconnect from the NBN
https://youtu.be/3MnDtg6vil8

Surprise! This wire is not made of copper
https://youtu.be/A3jijOTdCwE

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	Ian Jackson	VK3BUF	General 3	Gerard Watts	VK3ZXC
Admin Sec	vacant		Web Master	Mark Clohesy	VK3PKT
Treasurer	Klaus Illhardt	VK3IU	Magazine Editor	Paul Stubbs	VK3TGX
General 1	Fred Reid	VK3FWR	Property Officer	'committee'	
General 2	Bruce Williams	VK3BRW	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
GGREC Web Site & Archive may be viewed at: www.ggrec.org.au
Website errors, contact web master: webmaster@ggrec.org.au
Facebook Page www.facebook.com/GippslandGate