



GATEWAY

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

November 2018

Mark VK3PKT's RF kit



**Reeves Beach Caravan Trip
Bar fridge -> Medical fridge
JOTA wrap-up
And More**

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Note: - club meeting minutes are on the club website

Event Queue

November:

- 16th General meeting & FT8 talk this Friday – Guide hall
- 18th The Rosebud RadioFest

December:

- 8th Christmas Lunch – see page 3 **-Updated, Hopefully now correct.**

January:

- 5nd Prac Night – Club rooms
- 18th General meeting – Guide hall

Hi everyone welcome to the November addition of the GGREC magazine.

FT8 Presentation

David Rolfe (VK3JL) will give a practical demonstration this Friday on FT8

His presentation will include what equipment you will need, along with the main advantages of FT8 over other digital to Digital modes, such as RTTY.

This is your opportunity to learn all about it.

Christmas Hamper

Remember to bring along your items for the Christmas Hamper this Friday.

Christmas Lunch

The Christmas lunch will be held at Pat's (VK3OZ) place in Tooradin, on the 8th December 2018. Remember to bring along your own food, drink chairs, sunscreen, hats etc. The club will provide the BBQ, along with limited shelter on the day.

An Email will be sent to members on how to get there, closer to the event.

Wireless Institute of Australia (WIA) Presentation

Last month Aiden Mountford (VK4APM), one of the WIA directors took part in a video hookup explaining the role of the WIA, what the WIA had to offer, what mistakes it had made in the past and what it was doing to avoid making similar mistakes today. Also of interest was the WIA's vision for the future.

Of particular interest to our members was the WIA's handling of our last Repeater request, which included unauthorized changes to our submitted paperwork, and why such applications took so long to review and finalize, before being passed on to the ACMA for approval. Aidan admitted that this was totally unacceptable and that new procedures had been put in place, including a group of people now overseeing all future requests, rather than just relying on one person. In the future this may become a fully automated process.

Members present were particularly pleased with Aidan's forthrightness, when addressing questions put to him, and his overall knowledge of the issues facing amateur radio.

JOTA / JOTI 2018

The club again took part in the Jamboree On The Air (JOTA). The International yearly event for Girl Guides and Scouts held on Saturday the 20th October, 2018.

Refer to the separate article for further details - on page 6

Club Badges

New club badges were handed out at the last general meeting.

If you ordered one and haven't received it, talk to Michael (VK3GHM)).

Show & Tell

This month's theme is still Handheld Transceivers and receivers (Held over from last month). So make sure you bring yours along to the meeting. The idea being that you give a quick 2 to 3 minute talk on the pros and cons on what you own.

Wants & Needs

Don't forget to think about your wants and needs, prior to the meeting. This is your chance to see if other members can help you out with components, or gear you're having trouble locating, or finding at the right price.

Reeves Beach Caravan Trip away

A number of members and their acquaintances turned up with their Caravans or tents, on Friday 9th November, to thoroughly enjoy themselves, over the course of the weekend.

Refer to the separate article for further details – on page 7

RLP Repeater

The committee will make an announcement when Ron (VK3FRDL) returns from holidays and submits his report on the matter. Members will be told of the final outcome early next year.

2 Meter Hand Held Yagi Antenna Project

At the last Prac night we aligned and tested a number of finished antennas. The verdict being that the antenna design exceeded all expectations for its intended use.

If you are yet to finish yours, try and do so, or at least as much as you can over the Christmas break in readiness for the first Prac to be held next year. If you have any questions, feel free to speak to me about them (Bruce VK3 BRW)

Remember this project is part of a theme, leading to a suitable interference receiver being built and a possible Fox Hunt in the near future.

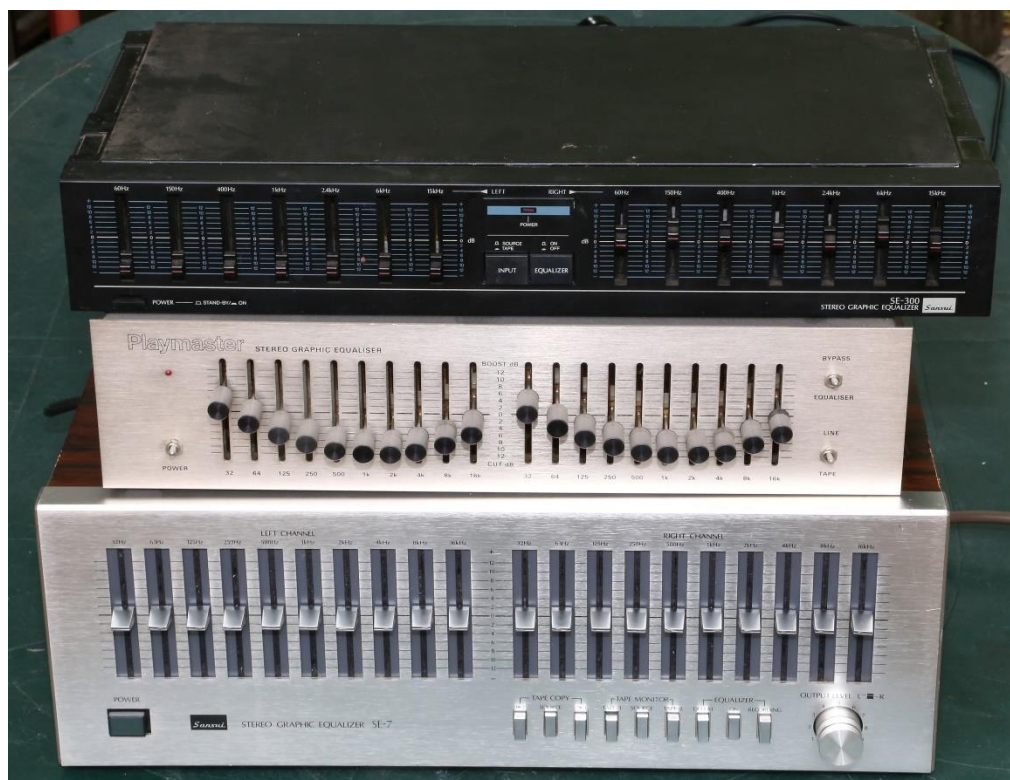
Financials

As usual Chris, will give a brief description on how we stand financially.

This will be the Last meeting and magazine for the year. So I hope to see you all at the next GM to be held this Friday.

Regards and 73s
Bruce

From The Editor



Welcome to the end of another year, boy does time fly.

Recently I have ended up with a small pile of Hi-Fi graphic equalizers, 4 to be exact; one is missing from this pile as it is doing service at my local church. The sound there is far from optimal with quite a lot of reverberation/echo and a peak in the sound somewhere around 250Hz – so hence the equalizers.

I asked one of the parishioners who is a musician if he had a

decent eq I could borrow, I was hoping he had a professional 31 bander I could borrow to see if it would help a lot more than the Akai? 5 bander I had installed as a trial a few weeks back.

Anyway he fronted my place the other day with two Sansui Hi-Fi units he had scrounged; both appeared to be ex council hard rubbish. (He is an avid 'collector'/hoarder) The top one had been given the teenager 'stomp' treatment, and had a US 2 pin power lead. (un-suitably 'bent' for local use) The bottom one had had the 'standard' power cord cutting treatment by the local copper collectors. The middle one is an EA Playmaster kit I built 20 plus years ago. I had forgotten it was a ten bander; otherwise I would have had it down at the church instead of the 5 bander there now.

So what to do with the leftovers, especially the 5 & 7 handers? One project I have had on the back-burner is a way to 'select' between multiple audio sources, and feed them to a common amplifier. At first I was just going to use a switch box, but after visiting Mark VK3PKT's shack where he was using a professional mixing desk to combine all his radio's and computer/music sources into one, my goals started to be lifted. One problem for me, I have heaps of sources (radios etc.) and not really any room for a conventional mixer. Then I looked at these old equalizers, lots of sliders just like a mixing desk, but in a much more compact form that can happily sit in a shelf with other gear on top. The only catch was the sliders are broken into two banks, and then it suddenly hit me, how about using the first bank of sliders as the mixer, and then feed that into the second bank, left as a graphic equalizer. The only downside with this plan is the output would be mono, not stereo, however for 90% of what I am doing here; most of the sources are mono anyway, so there is no problem. If you feed the output from a two-way radio into a Hi-Fi amp & speaker, quite often you end up hearing a lot more than desired, usually these extra's like sub-audio tones & high frequency hiss are filtered out by the radio's tiny speaker that simply cannot reproduce those sounds. Quite often a two-way radio's audio is limited to about 250Hz to 5KHz, whereas a Hi-Fi system (should) be able to reproduce 60Hz to 20KHz, fairly flat. So been able to taper off the highs and lows beforehand can be very important. The other use of this setup is for elderly operators with failing hearing, quite often they desire a boost to certain audio bands to make the conversation easier to understand, that and the extra grunt from a Hi-Fi amp and they are set.

Paul VK3TGX

JOTA / JOTI 2018.

Well JOTA has come and gone for another year and it was a great success. I arrived early on Sunday and was soon joined by Mike Ide and we cleaned, vacuumed and tidied up the radio shack. At around 11:30am, I cooked up some sausages and they were ready to eat by the time Graeme Brown, Bruce Williams, Mike Van Den Aker and Graham Eldrett arrived. The sausages tasted delicious and were bought from the same place that supplied sausages for the Hamfest. When the Guides arrived, we were able to contact Gilwell Park Scouts and we let our Guides have a good experience talking to Scouts on the VHF radio. HF communications did not go well due to propagation limitations. Inside the hall, Graeme Brown was helping the Guides to learn all about Morse Code, a skill they quickly picked up. After the VHF contacts with Gilwell park, we had a great time “fox hunting” around the Guide Hall car park and surrounds. During the afternoon, we were treated to a variety of yummy cakes and slices by the Guide leaders, much more than we could eat!

Thanks again to Mike Ide VK3KTO, Graeme Brown VK3BXG, Bruce Williams VK3BRW, Mike Van Den Aker VK3GHM and Graham Eldrett VK3FGKE for coming to help out with JOTA and making the day fun and a success.

Bruno Tonizzo

Presidents Footnote

I sincerely want to thank Bruno (VK3BFT) for organizing the event this year, as well as providing the BBQ lunch for us all.

No photos of the event you ask? When working with children, you can't take photos of the children without the express permission of the children's parents. That's hard to do when not all of the parents were available to give permission.

My thanks are also extended to the Cranbourne girl guides, who provided us with ample cups coffee and cake during the day and made us all feel at home.

Bruce (VK3BRW)

Reeves Beach Caravan Trip

On Friday 9th November a number of us met up at Reeves Beach (free camp) Caravan Park, located on the Ninety Mile Beach, not far from the township of Woodside.

Both Chris (VK3QB) and myself turned up with our caravans and Ian (VK3BUF) and Dianne (VK3JDI) had their campervan. Others namely Pat (VK3OZ) and Megan (VK3AAK) along with Ian's father and friends brought their tents along.

The first night was mainly taken up with settling in, pitching tents, setting up tables and chairs, and digging a pit and getting the campfire going. There's nothing more relaxing than sitting around a campfire at night, drinking a nice red (or whatever takes your fancy) and chatting with friends and the like. Although it must be noted that Chris still found the time to also get his end fed Antenna hitched up to a nearby tree as was making some good CW contacts for a large part of the night.



Fig 1 The campsite. Saturday Night prior to nightfall

The next day Megan (VK3AAK), Ian (VK3BUF) and Chris (VK3QB) made the 100m trek across the sand dunes to the beach. What a stunning location for a radio activation.

Megan's home-brew inverted L End Fed Half Wave (EFHW) was erected in about 10 minutes and performed extremely well. I also hear on good authority (hello Chris) that Megan intends to write an article on the design of this antenna and how to make one of these simple, versatile and cheap antennas for a future edition of the magazine.

Fed with 10 watts from the very credible Elecraft KX-3 radio, Megan and Chris worked about 20 stations from VKs 2, 3, 4, 5 and 7 on 40m.



Fig 2 Early Sunday Morning. Ian, Dianne Pat and Meagan waiting for the fire to be relit



Fig 3 Chris is certainly no Oil painting



Fig 4 Megan doing her stuff with Antenna in the background



Fig 5 Close up of Megan's Antenna Balun / combo antenna winder



Fig 6 Bruce doing a spot of Surf fishing



Fig 7 The Catch. One Reeves Beach Flathead caught on Blue Bait

I and others also took the opportunity to go for walks along the beach and visited the townships of Woodside and the historical township of Yarram.

On the Saturday I managed to get in a spot of surf fishing. Catching a decent sized Flathead for my troubles.



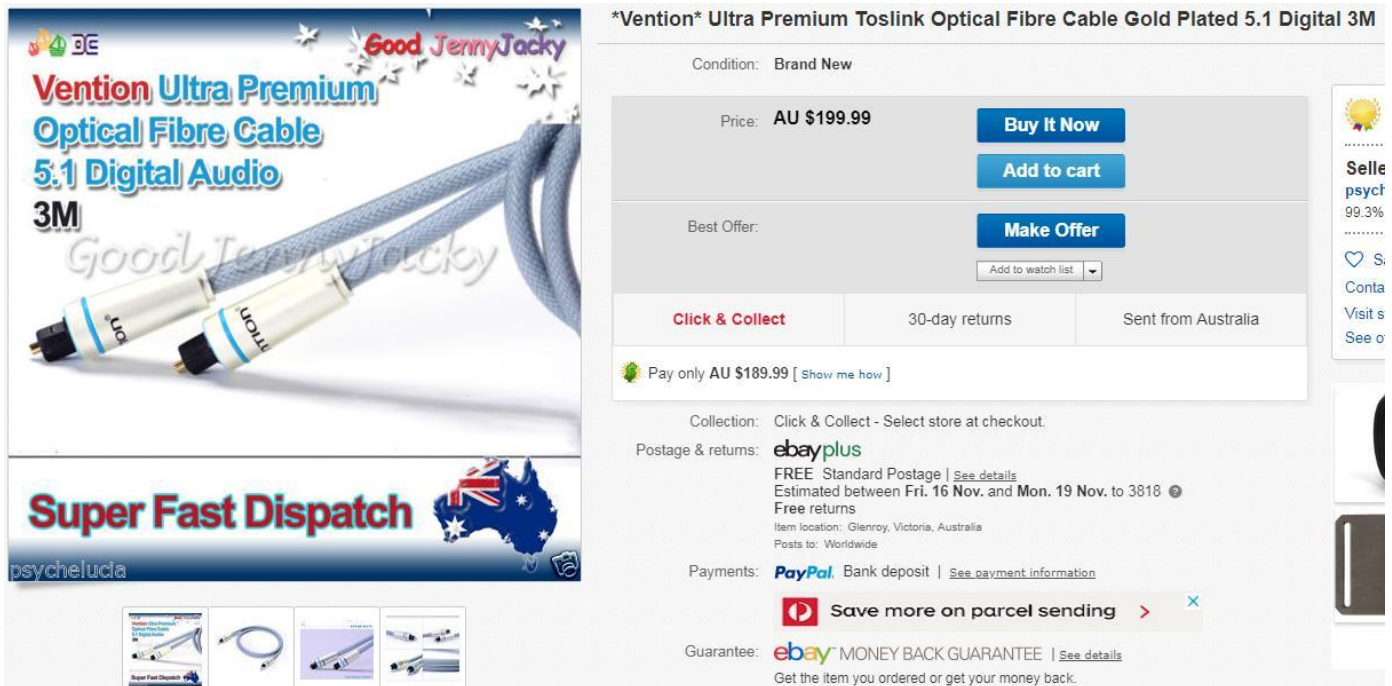
Fig 8 Yarram Club Hotel Built in 1912

Sunday saw glorious whether just like the Saturday. Time to sit around drinking coffee together and reminiscing about the weekend that was. Yes it was now time to slowly pack up and head back home. Well in my case to visit a good friend in Painesville, before heading home late Monday afternoon

In summery I'm looking forward to the next trip away. For those of you who couldn't make this trip, for whatever reason, it's your loss our gain

Bruce (VK3BRW)

Premium Optical Audio




***Vention* Ultra Premium Toslink Optical Fibre Cable Gold Plated 5.1 Digital 3M**

Condition: Brand New

Price: **AU \$199.99** [Buy It Now](#) [Add to cart](#)

Best Offer: [Make Offer](#) [Add to watch list](#)


Click & Collect 30-day returns Sent from Australia

 Pay only **AU \$189.99** [Show me how](#)

Collection: Click & Collect - Select store at checkout.

Postage & returns: **ebayplus**
FREE Standard Postage | [See details](#)
Estimated between Fri. 16 Nov. and Mon. 19 Nov. to 3818
Free returns
Item location: Glenroy, Victoria, Australia
Posts to: Worldwide

Payments: **PayPal**. Bank deposit | [See payment information](#)

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While looking for optical (laser) cables to connect my DVD, MiniDisc, Playstation for Blu-ray and my Surround Amp together I came across this beauty for audiophiles... a \$200 3 metre Toslink cable. Now I get it that premium middle of the range analogue cables with decent copper and shielding are better than the cheap \$2 shop RCA leads but optical does not care, if the laser signal can get from source to sink then the sound will be perfect so needless to say I got the 1 meter cables for \$3 delivered from China and they work just fine, I just don't get why Gold plated optical cables make a difference?

Mark "Pockets" Clohesy

Bar fridge conversion to Medical fridge

So take a 50 odd litre fridge basically a little mini bar fridge give it a glass door and digital thermostat control with alarm and it will cost you, wait for it AU\$3500-\$4000 because it is a medical storage fridge for vaccines and insulin etc.



I had a need for a small fridge to keep temperature critical insulin in storage during summer, last summer the 12-volt mini Peltier effect fridge had broken down and I lost nearly 50 pens of insulin.

Anyway I didn't need the glass door which is to see what is inside for stocktake without opening it, so I got on eBay and purchased a 48 litre mini fridge, I then purchased a digital controller and spent about an hour rewiring the fridge and I now have a medical fridge for the bedroom that cost me less than \$150 and an hour or so of my time.

Here is a "real" medical fridge it is a bit bigger at 60 litres but you have to ring for a quote, they sell a really small 30 litre for \$2500 plus GST

<http://www.enlake.com.au/medical-fridge-benchtop.html>



So I spent the afternoon doing the digital controller conversion on the minibar fridge I use for medication storage of my Insulin for diabetes. I purchased the fridge from eBay for \$119 on sale delivered brand new it is a 48L mini fridge as used in hotels for minibars.

I purchased a digital thermostat and controller from eBay for less than \$20 delivered. It has heat and cool circuits to allow control of say a fish tank, during winter it can run a heater and during summer run a chiller. I am just using the cool side.

I have it set at 8 Degrees C it will cool down until it hits 5.5 c then turn off the compressor, the fridge continues to drop a couple of degrees as air moves around inside, then when it gets to 8c it starts up again, when it reaches 5.5c it turns the compressor off again until it hits 8c and it starts all over again.

There is a 10-minute compressor delay in case the temperature cycles quickly due to the door being opened this prevents the compressor from turning off and on to quickly.



The controller is not a plug and play device you need to know what you are doing and requires disconnection and replacement of the original mechanical thermostat that was in the fridge.

I mounted the controller on the back of the fridge pointing up so that the display was not shining forward as the fridge is used for medication and it is in the bedroom so this way there is just a dull red glow on the wall at night and it is less likely to keep us awake at night.

As it was the controller had a dodgy solder joint on the SMC transistor that drives the relay. It had tombstoned slightly and was not making a connection, I had to reflow it but I finally got it to work, bloody lack of quality control, but I guess you get what you pay for.

The relays are rated at 240VAC/10A and the fridge is only 60Watts so not a problem there. I will keep an eye on it over the next few weeks to see how it behaves and I am going to order a temperature data logger to put in the fridge to monitor the temperature levels over a few days.

Mark "Pockets" Clohesy

Digitizing Vinyl Records



Do you have a stash of old vinyl records, or LP's that you would like to listen to more often, on 'modern' equipment?

When I was young there were only two options for buying music, either records or cassette tapes. Records definitely offered the better sound at the time, however the constant cleaning etc. required to give a fairly glitch free playback was a pain, however my main concern at the time was wear and tear, I tended to dub them straight onto open-reel tape as soon as possible, and then just listen to the tape.

So when CD's came out, I was fairly quick to buy one, not the very first players, they were a tad expensive (and there was not many discs early on), so my first was the second? model player from Marantz. Most of these early players only had one 14 bit digital to analogue converter in them. 16 bit converters were a challenge to make on mass, fitting two was a pipe dream, so it took a while for the full 16bit signal of a CD to be finally available. As these first gen players only had one D/A converter, it was multiplexed back and forth between the left and right channels. The BBC over in England found out fairly quickly the limitations of this, as they were mixing the two channels together for their mono radio/TV transmissions they noted quite a drop in the higher audio frequencies. This was caused by one channel being delayed by half a sample as the one D/A was switched back a forth between left & right. Having one channel delayed meant that when they were mixed together the signals were out of phase – yuk.

Anyway, back to the present, all things digital now rule. (99% of my audio is from a computer) so the best way for me to enjoy my music is to get it all into one common format – digital.

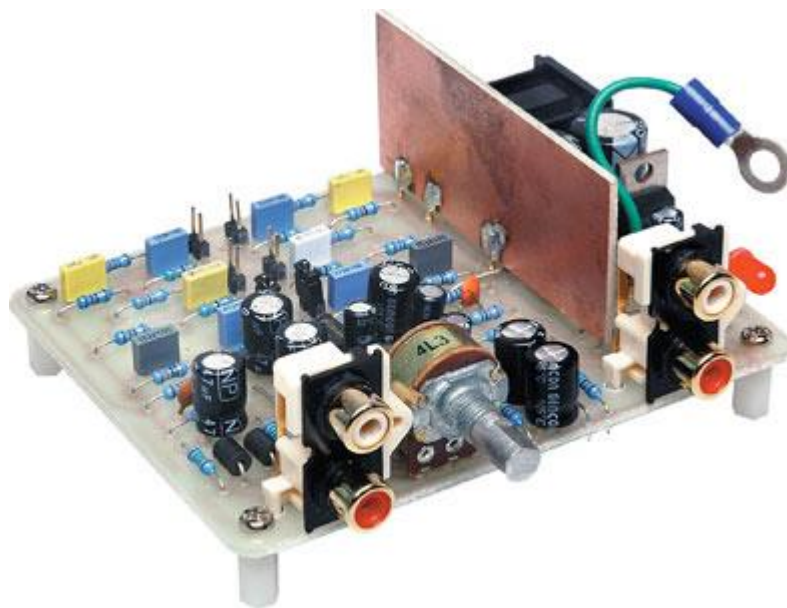
Once you have it in a digital format, you can either make a CD out of it, or just load it into a digital media player. Most modern cars have long forgone the CD player, so you have to either plug in a USB stick, or play it wirelessly from a phone etc. using Bluetooth.

So how do you do it, Sure if you are desperate you can buy an all-in-one Turntable-USB recorder, but these are totally plastic and extremely flimsy, so crap audio is sure to follow.

To do it properly you need to start with a decent turntable, new ones go for about \$400 plus (the sky's the limit here), so the second-hand market (eBay etc.) is probably your best bet.

Next you need a phono preamp. If you are willing to fork out for a brand new turntable, they can be had with inbuilt pre-amps. Otherwise you can either buy one, or maybe use an older Hi-Fi amp with an inbuilt pre-amp.

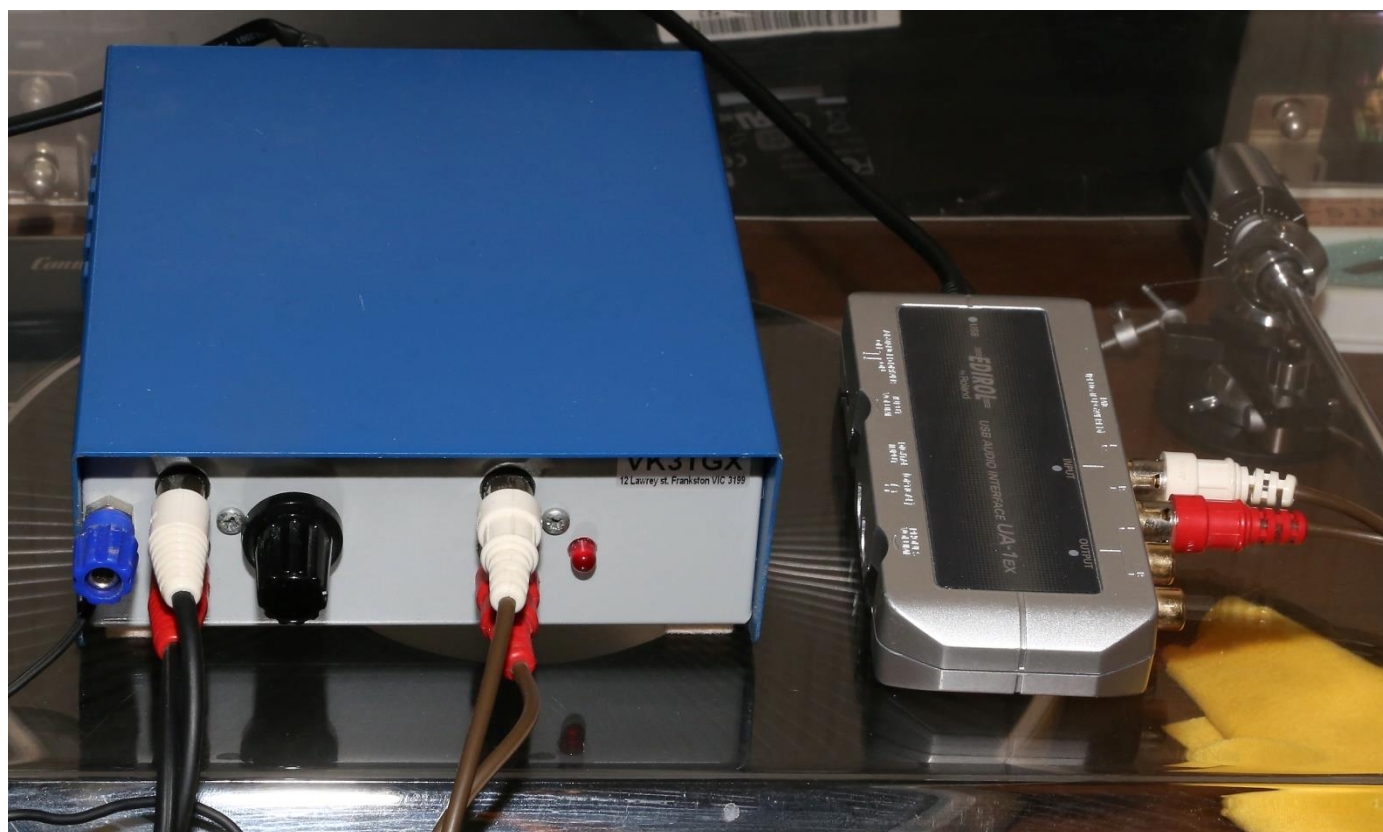
Next you need an analogue to digital converter. Early in my vinyl digitizing days I used the pre-amp in my Yamaha Hi-Fi amp, and fed it into the line level input on my computer. Your luck here can be a real mixed bag, some amplifiers have quite noisy pre-amps, and likewise some computer's audio circuits are likewise truly awful. (As in noisy) And if your computer of choice is a laptop, then it quite likely will only have a mono microphone input, all but useless.



I upgraded my system and now I am using a kit pre-amp (silicon chip?) bought from Altronics, they currently go for \$39.95, however if you have a GGREC club ID, you can get a discount on that price.

K5513 · Preamp RIAA Shortform Kit
<https://www.altronics.com.au/p/k5513-preamp-riaa-shortform-kit/>

As for a digital converter, I went into a largish pro music shop and bought a semi-pro 'Edirol' converter, I won't give any details here, as it is now an obsolete model, no longer supported.



Here is my setup, temporarily on top of the turntable for their photo shoot.

Once it is all hooked up, next comes the software. I use a freely available program called Audacity; it runs on either Windows, Linux, or Apple Mac. The only other software you may desire is something to de-click the recordings. I was quite unhappy with the de-clicker in Audacity; however that was quite a few versions ago so maybe it's improved these days.

I now use a program called ClickRepair <http://www.clickrepair.net/>

It is not free, However when I first downloaded it, it had a trial period – hopefully it still does.

I also tried iZotope RX 6 Audio editor, again not free, but I personally prefer ClickRepair.

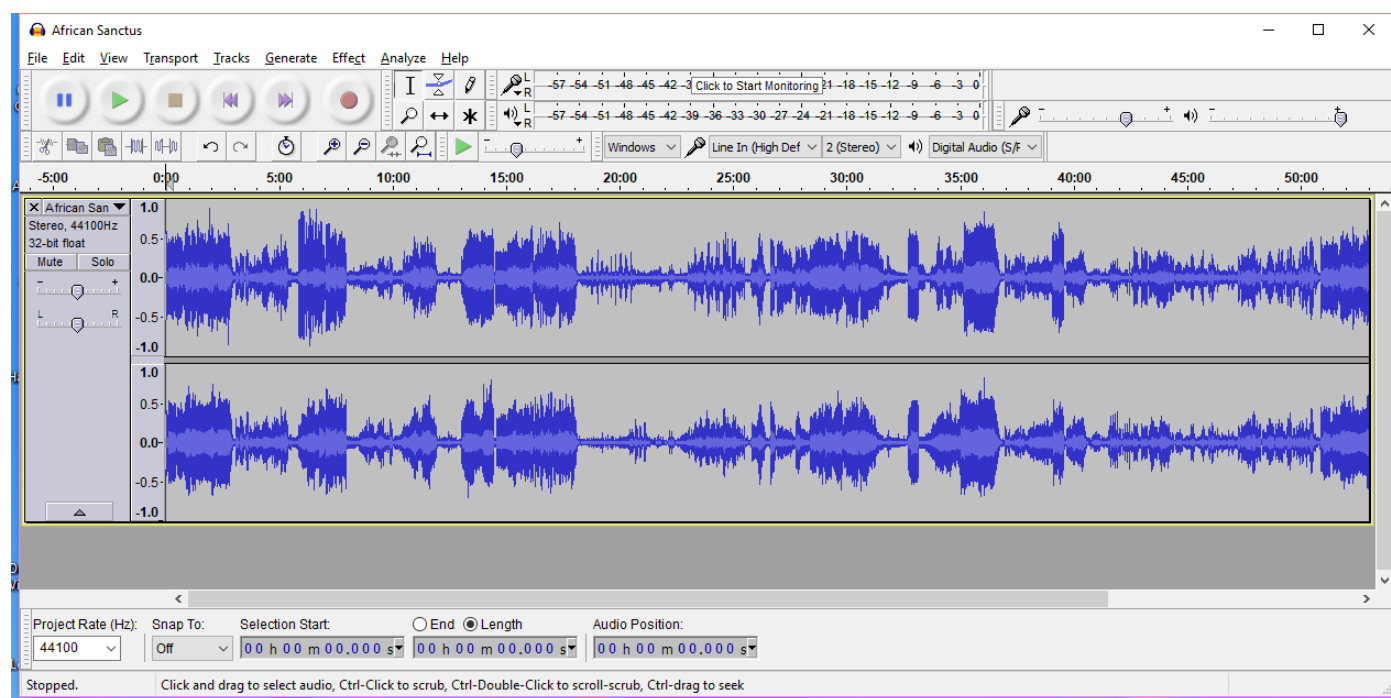


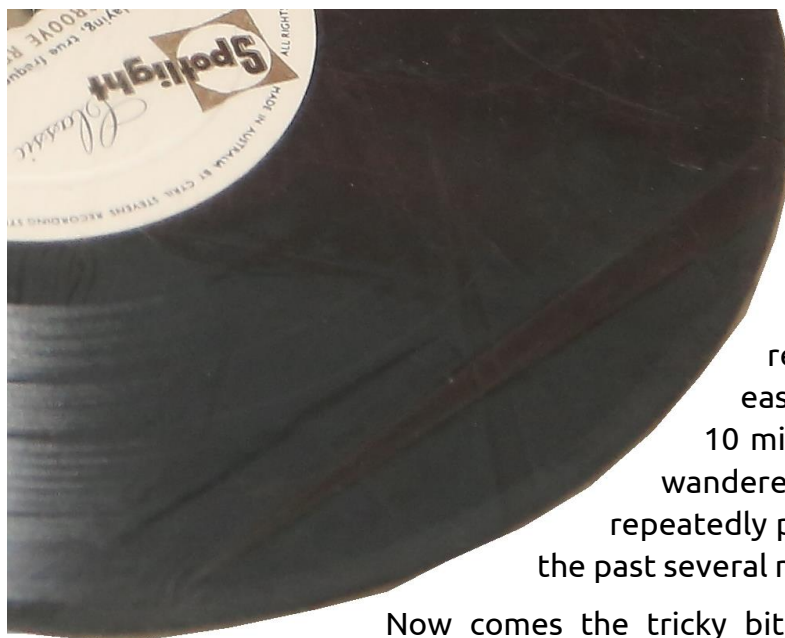
Once you have Audacity loaded the next task is to set the audio levels, probably by an input pot on your D/A converter. This can involve a few test runs, as you have to find the loudest part of your record. If you set the level too high, then clipping will result, (clipped clicks are ok) and if it is too low then excessive software level adjustments will be needed, it is preferable to not need any adjustments, as just upping the level kind of masks the fact that you only recorded a 14 bit or less signal. If your D/A supports 24 bit sampling, then use that as it gives you much more room to play with when it comes to making level changes with less

signal degradation. I record in only 16bits at 44.1k sample rate, the same as used by CD's.

Think of going from 16 bit to 24 bit audio like going from a 6 digit calculator to a 16+ digit scientific calculator, all calculation's (audio transforms) now have greater accuracy, short of simple cuts, all edits are transformations, more precision = less error = less distortion.

As my converter is now quite old and now unsupported by Roland, I am limited to the generic 16bit windows drivers, I'll have to buy a new one to get 24 bits, however for what I'm doing, I'm happy to stay with 16 bits for now. With the quality of my turntable and records, the dynamic range and noise floor I don't really think it justifies me going any further. (Maybe tomorrow!)





I tend to record both sides of a given record in one session, just pausing Audacity so I can turn over the record and apply a few more passes of my carbon fiber bristle brush etc. in a vain attempt to get rid of a few more clicks and pops. I've even extended this to doing a two record album set in a single recording session. Once in Audacity, it is easy to delete any unwanted sections, say a 10 minute gap between side A and B, as I had wandered away and didn't realize I had been repeatedly playing & recording the runout groove for the past several minutes.

Now comes the tricky bit, splitting the recording into individual tracks. Personally I don't bother anymore, I just leave the whole record as one file/recording, starting with the needle drop and finishing with the needle lifting off. (For that complete vinyl experience when played back) The problem to me is that there is never complete silence between tracks, and if I try and use noise filters etc. to correct that, I risk degrading the audio quality. Having that not so perfect inter track silence interrupted by real true silence as the resultant CD hops from one track to the next troubled me – I didn't like the effect. On a CD there is an option to record the CD with no inter-track gaps, and then just use the vinyl gaps you recorded. I.e. split the tracks just before the start of each track, leaving the noisy vinyl gap intact on the end of the previous track. This way the CD will play just like the original record, warts and all. However I don't convert them to CD's (any more) and just play them as a digital file on my computer. Trouble is there is no standard between music players of how the inter-track gap should be handled. Most just blindly add a 2 second pause, or give you the chance to blend the start of the next track into the end of the previous – not quite what I am trying to achieve, so as I said just before, I now leave them as one single recording. Skipping tracks is problematic with best guess moves of the music players progress slider, kind of like fast winding a cassette tape and trying to find the start of the next track – It does not overly bother me – so no problem this end.

In one way I tend to like the audio quality from my older vinyl records, they just sound better than some modern recordings. You can find plenty on the 'net all about how analogue is superior to digital, and in some ways I agree, However the funny bit is I cannot tell the difference between my digital recordings, and the original vinyl record. So the difference cannot be digital as such, I'm listening to digital and I am hearing my vinyl record. No I now believe the difference is how modern sound engineers edit the audio in their studios. In years gone by, the tools to edit the sound were a lot more limited, mixer sliders and a few filters and limiters etc. These days there is so many digital 'things' that can be done all in the name of audio improvement it's not funny, have a look at iZotope website <https://www.izotope.com/> and all that can be done. – Quite frankly it's almost scary. And that I believe is the problem with a lot of modern music, the musician's skills have been replaced by over editing.

Paul VK3TGX



Club Information



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

Office bearers

President	Bruce Williams	VK3BRW	Web Master	Mark Clohesy	VK3PKT
Admin Sec	Michael Van DenAcker	VK3GHM	Magazine Editor	Paul Stubbs	VK3TGX
Treasurer	Chris Chapman	VK3QB	Property Officer	Bruno Tonizzo	VK3BFT
General 1	Barry Hamilton	VK3ABH	Secretary	Ian Jackson	VK3BUF
General 2	Ron Lacey	VK3FRDL			

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 VK3RLP, In 434.475MHz Out 439.475MHz CTCSS 91.5Hz
VK3RLP 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

- Pension 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 at each April Annual General Meeting.

Magazine Articles to editor@ggrec.org.au or vk3tgx@gmail.com Cut off, 10th
All other Club correspondence to: secretary@ggrec.org.au
or via Snail Mail : GGREC, 408 Old Sale Rd, Drouin West 3818
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