



*** QDG DIGIPEAT June 2018 ***

Digipeat is the Official Newsletter of the Queensland Digital Group
Incorporating 'Amateur Eye', the Official newsletter of the
South East Queensland Amateur Television Group

June QDG Meeting

The Next QDG general meeting will be held on Friday June 15 at the [Chermside Library](#),
375 Hamilton Rd, Chermside QLD 4032

Car park off Kittyhawk Drive

Doors will open at 7:00pm for a meeting start of 7:30pm.

If the door is closed please phone Alan 0401 716 778

Editorial

Redcliffe went very well and the QDG and SEQATV group ended up using four tables, we will be looking forward too 2019.



SEQATV group tables, front left.

Alan VK4NA

Baluns: What They Do And How They Do It

<http://www.eznec.com/Amateur/Articles/Baluns.pdf>

All about Baluns

<http://vk5ajl.com/projects/baluns.php>

RF Transformers

RF transformers are widely used in low-power electronic circuits for impedance matching to achieve maximum power transfer, for voltage step-up or step-down, and for isolating dc from two circuits while

maintaining ac continuity. They are also used for common mode rejection and as baluns.

<https://www.minicircuits.com/pages/pdfs/tran14-2.pdf>



Thermal Cameras

Who Said Thermal Cameras Weren't Accessible To The Masses?

<https://hackaday.com/2018/06/08/who-said-thermal-cameras-werent-accessible-to-the-masses/>

Parrot's new drone

Parrot's new drone is a 4K foldable flier set to challenge DJI Mavic Air

<https://www.techradar.com/news/parrots-new-drone-is-a-4k-foldable-flier-set-to-challenge-dji-mavic-air?>

UK HF trials using high-speed data and video transmissions

They used frequencies, licensed by Ofcom, of 3.613, 6.390, 7.975 and 13.047 MHz with bandwidths up to 24 kHz and power up to 400 watts.

http://www.hfindustry.com/meetings_presentations/presentation_materials/2012_sept_hfia/presentations/RC_WBHF_UK_Trial_2012.pdf

Over Air Test Results of Highest Mil-Std-188-110C App D WBHF Waveform Data Rates

http://hfindustry.com/meetings_presentations/presentation_materials/2011_sept_hfia/presentations/3_Rockwell_WBHF_High_Order_QAM_OTA_Results.pdf

The random length end fed HF antenna and you

Short video on a simple multiband HF antenna (w/tuner) you can put on the air with a few multipurpose items in less time than it takes to watch this video.

<https://m.youtube.com/watch?v=a0hCtmbD5as>

How to Build a 9:1 UnUn for Ham Radio Antenna

Simple and inexpensive to build the 9:1 end fed long wire antenna is a good antenna for both portable and home use. This antenna, like all antennas, has its advantages and disadvantages. You'll see some of both in this how-to video.

<https://m.youtube.com/watch?v=mfvqQeDLoQ>

Foundation Guide to Amateur Satellites (special focus on AO91) - Pt 1

A new amateur satellite has just gone up and it's super easy to work. You just need a pair of handhelds on 2m & 70cm FM. Watch this video to find out how to make contacts through AO91 with equipment you probably already have.

<https://m.youtube.com/watch?v=astteV2umOg&list=PLj8-NKcZtRf64IyCU4bWaULuKfFvWlUjJ>

Efficient 2 meter Disguise Antenna Made From a TV Satellite Dish

<http://w6nbc.com/articles/20xx-dishslot.pdf>

Bringing Communications Back Down to Earth

High frequency radios can bridge a beyond-line-of-sight gap during operations in contested environments.

<https://www.afcea.org/content/bringing-communications-back-down-earth>

Build Your Own Avionics Suite, If You Dare

Avionics are the electronics that control and monitor the aircraft.

<https://hackaday.com/2018/05/13/build-your-own-avionics-suite-if-you-dare/>

Balanced vs Unbalanced Feed Line

<https://m.youtube.com/watch?v=YaTCXQSu9B4>

DRM — for Large Regions

AM is being revitalized through Digital Radio Mondiale

<https://www.radioworld.com/columns-and-views/drm-for-large-regions>

New AnyLocker- radio reference locking board

This project is a successor and in spirit of the XREF reflock device by David VK3HZ and Graham VK3XDK some years ago. Boards have not been produced for some time.

<https://glenenglish.com/2018/05/12/new-anylocker-radio-reference-locking-board/>

Direct CNC Control with the Raspberry Pi

If you're building a CNC router, laser cutter, or even 3D printer, you'll usually be looking at a dedicated controller. This board takes commands from a computer, often in the form of G-Code, and interprets that into movement commands to the connected stepper motors. Historically this has been something of a necessary evil, as there was really no way to directly control stepper motors with a computer fast enough to be useful. That may not be the case anymore.

<https://hackaday.com/2018/05/15/direct-cnc-control-with-the-raspberry-pi/>

RS41HUP (Ham Use Project) - Project Horus Fork

Firmware for RS41 for HAM use.

It is possible to recycle RS41-SGP sondes for amateur radio use without any electrical changes! You just have to build a new firmware (this one) and apply it via a cheap programmer, the "ST-Linkv2" (or alternatives). The modified sonde can now transmit on a user-defined frequency in the 70cm band, with Habhub-compatible RTTY telemetry!

<https://github.com/darksidelemm/RS41HUP>

Vaisala RS41 Expansion Connector Pinout

https://github.com/darksidelemm/RS41HUP/blob/master/docs/programming_header.md

RS41-FOX - RS41 Amateur Radio Direction Finding (Foxhunting) Beacon

This codebase turns a Vaisala RS41 into a 70cm 'radio fox', suitable for use in amateur radio direction finding contests.

<https://github.com/darksidelemm/RS41FOX>

Power Supplies: Switching vs. Linear

<https://m.youtube.com/watch?feature=youtu.be&v=PISZsjNhq7I>

SMA Spanner mods for microwave amateur (ham) radio, FPV

Doug, VK4OE, shows us some handy modifications to a 5/16" combination spanner to make it more user friendly when dealing with SMA connectors in tight spaces.

https://m.youtube.com/watch?v=VFSOrM_RBo8

Mostly 3D printed discone antenna

An antenna that would be relatively easy to build, lightweight and broadband (so that I don't have to change the antennas every time I want to listen in to different frequencies). The antenna was designed in the way so that it can be built with use of 3D printer and some other tools that you probably already have. I am very happy with this antenna – it works exactly as expected. It receives signals quite well in the range of about 85 Mhz to about 850 Mhz.

<https://bytechlab.com/2018/05/mostly-3d-printed-discone-antenna/>

Quick cross reference Coax table

Between ABR industries and Messi & Paoloni equivalent products https://0f03806ff3d3e74e9602-196c53d60dd8027754ef96352b4703ae.ssl.cf2.rackcdn.com/Magento/Live/Misc/m&p_vs_coax.pdf

Coax Calculator

Coaxial Cable - Attenuation & Power Handling Calculator

<http://www.timesmicrowave.com/calculator/?productId=52&frequency=120&runLength=50&mode=calculate>

50 and 75 Ohm Coax Catalogues

For each cable you shall find a dedicated table showing the "residual power %". Whatever the cable length will be, as well as the frequency or power handling required, there are plenty of useful indications there! Given the relentless increase of noise sources, (LED lamps have hugely worsened the background noise level), cables of the old generation, such as RG 213/u, RG8, even RG 214, RG 174, are no longer a solution, for what concerns Screening efficiency (SA). Our cables are evolutions not just over these old fashioned items, but over new generation cables such as LMR 400.

<https://messi.it/en/download.htm>

#105 Balun PART 3: How to build an effective working 4:1 Balun for 800 watt HF power

In the third part of our series we complement our 1:1 Balun with a 4:1 version. Focus is again excellent common mode attenuation and first class SWR matching. All for high HF output

<https://m.youtube.com/watch?feature=share&v=P7wW4TtXmc8>

USB Reverse Engineering: A Universal Guide

Every hacker knows what it is to venture down a rabbit hole. Whether it lasts an afternoon, a month, or decades, finding a new niche topic and exploring where it leads is a familiar experience for Hackaday readers.

<https://hackaday.com/2018/05/25/usb-reverse-engineering-a-universal-guide/>

How to Design a Coil for Specific Inductance

How to design a coil for a specific inductance that you need, including how to calculate the inductance and where to find an online inductance calculator. This goes through all the parameters: number of turns, area, length and relative permeability as well as mentioning some other factors like capacitance, frequency and coupling.

<https://m.youtube.com/watch?feature=share&v=awyLYgu6ODM>

A Review of the KiwiSDR: 10 kHz – 30 MHz Wideband Network SDR

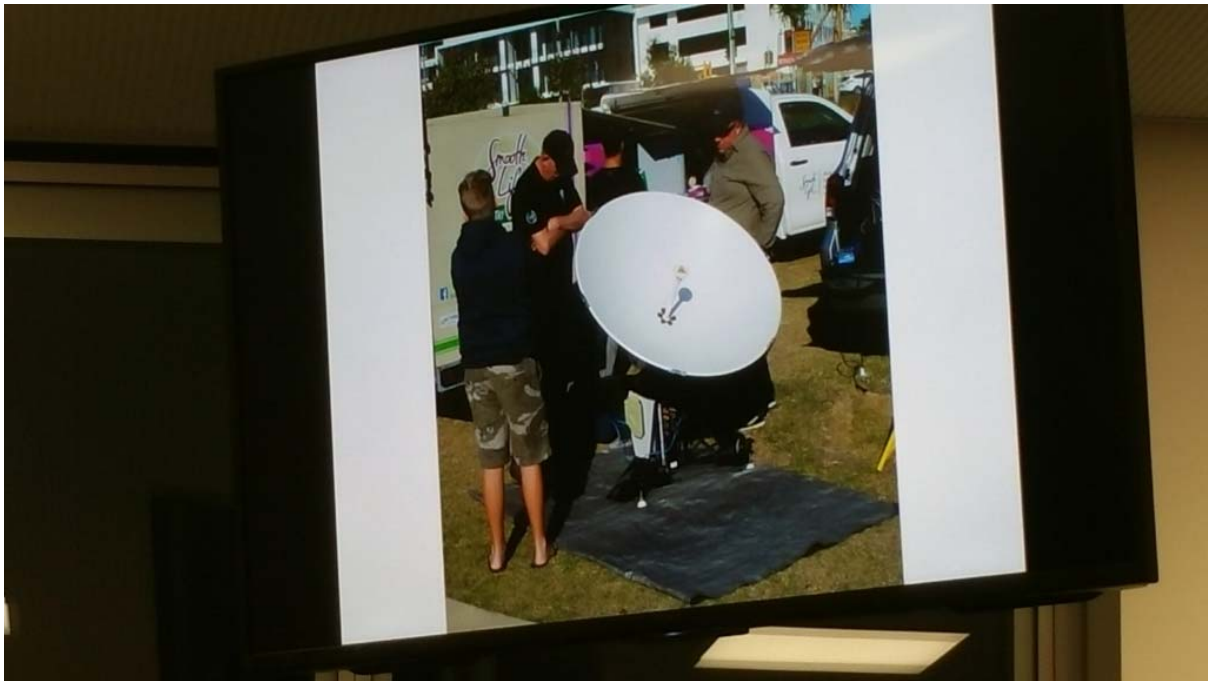
The KiwiSDR is a 14-bit wideband RX only HF software defined radio created by John Seamons (ZL/KF6VO) which has up to 32 MHz of bandwidth, so it can receive the entire 10 kHz – 30 MHz VLF/LF/MW/HF spectrum all at once. However, it is not a typical SDR as you do not connect the KiwiSDR directly to your PC. Instead the KiwiSDR is a cape (add on board) for the Beaglebone single board computing platform.

<https://www.rtl-sdr.com/a-review-of-the-kiwisdr-10-khz-30-mhz-wideband-network-sdr/>

Brisbane VHF Group meeting May 2018

Thanks to Rex, VK7MO for the talk on 10GHz portable operation, including EME and terrestrial.





Security Advisory for VPNFilter Malware on Some NETGEAR Devices

NETGEAR is aware of a piece of malware called VPNFilter that might target some NETGEAR devices.
<https://kb.netgear.com/000058814/Security-Advisory-for-VPNFilter-Malware-on-Some-Routers>

Chrome And Firefox Leaking User Facebook Data For Over A Year

According to recent revelations by a few security experts, the popular browsers Chrome and Firefox have been leaking Facebook data of their users for over a year. However, the problem is now seemingly fixed.

<https://latesthackingnews.com/2018/06/02/chrome-and-firefox-leaking-user-facebook-data-for-over-a-year/>

FBI, DHS, and UK Authorities issue warning over VPNFilter

The FBI, DHS and UK authorities have issued a warning for the VPNFilter malware threat. According to Alert TA18-145A, there are concerns that actors will use VPNFilter to target routers and “collect intelligence, exploit local area network (LAN) devices, and block actor-configurable network traffic.”

<https://www.cloudmanagementsuite.com/fbi-warning-reset-routers>

VPNFilter Update - VPNFilter exploits endpoints, targets new devices

Cisco Talos, while working with our various intelligence partners, has discovered additional details regarding "VPNFilter." In the days since we first published our findings on the campaign, we have seen that VPNFilter is targeting more makes/models of devices than initially thought, and has additional capabilities, including the ability to deliver exploits to endpoints.

<https://blog.talosintelligence.com/2018/06/vpnfilter-update.html?>

The Zip Slip vulnerability – what you need to know

Research by security firm Snyk has revealed that thousands of projects may be affected by a serious vulnerability, one so simple you'll need to put a cushion on your desk before you read any further (in case of involuntary headdesk injury).

<https://nakedsecurity.sophos.com/2018/06/06/the-zip-slip-vulnerability-what-you-need-to-know/>

Cheap Stuff To Hack: A Router With An SDR For \$13 US

the Tzumi MagicTV, a device that allows you to watch over-the-air television on your phone. What's inside? It's a WiFi router, an RTL-SDR, and a battery pack in one tiny package. The best part? It costs \$13 US, and apparently Walmart is just blowing them out.

<https://hackaday.com/2018/05/30/cheap-stuff-to-hack-a-router-with-an-sdr-for-13/>



PstRotator - Software for Antenna Rotators

PstRotator supports separate antenna rotator controllers for Azimuth and Elevation control. It can control two separate rotator interfaces: one for azimuth and the second for elevation, or it can control a single azimuth + elevation rotator interface.

Connect the rotator interfaces to PC using the RS232 ports or USB to serial converters, and select the communication ports from the available COM Ports.

http://www.qsl.net/yo3dmu/index_Page346.htm

Understanding SWR by Example

Take the mystery and mystique out of standing wave ratio.

<https://www.arrrl.org/files/file/Technology/tis/info/pdf/q1106037.pdf>

New approaches to amateur radio qualification arrangements

Consultation closes: 02 July 2018

The ACMA is consulting on new approaches to the way that amateur radio operator qualifications are conferred.

The current arrangements have been in place since 2009 and are due to expire in February 2019. The ACMA is contemplating three possible approaches to how amateur radio qualifications are conferred in the future. The ACMA is also considering the establishment of a Syllabus Review Panel to ensure that the amateur syllabus remains fit for purpose.

Opportunity to provide feedback

The ACMA welcomes comments from stakeholders on the new approaches to amateur radio qualification arrangements described in this paper. Any other issues relevant to the way amateur radio operator qualifications could be conferred are also welcome, including other possible approaches not described in this paper.

<https://www.facebook.com/groups/vkhamradio/permalink/2010917179161458/>

Enable doubles fibre broadband speeds celebrating completion of network across greater Christchurch

Enable has completed its fibre broadband network roll-out to more than 200,000 homes, businesses and schools across greater Christchurch 19 months ahead of schedule. To celebrate this significant achievement, Enable is doubling the download speed of its most popular wholesale residential broadband service and providing this to retailers at no extra cost.

“We are doubling the download speed of our 100 Mbps residential wholesale service to our retailers at no extra cost so many residential customers will enjoy 200 Mbps download speeds, as our way of saying thank you.” This offer will be available on new orders from 1 July 2018 and Enable will work with its retail service providers to ensure as many existing customers as possible are reaping the benefits of the upgraded speed by Christmas.

<https://www.enable.net.nz/media-releases/enable-doubles-fibre-broadband-speeds-celebrating-completion-of-network-across-greater-christchurch/>

The Apostrophe Protection Society

The Apostrophe Protection Society was started in 2001 by John Richards, now its Chairman, with the specific aim of preserving the correct use of this currently much abused punctuation mark in all forms of text written in the English language.

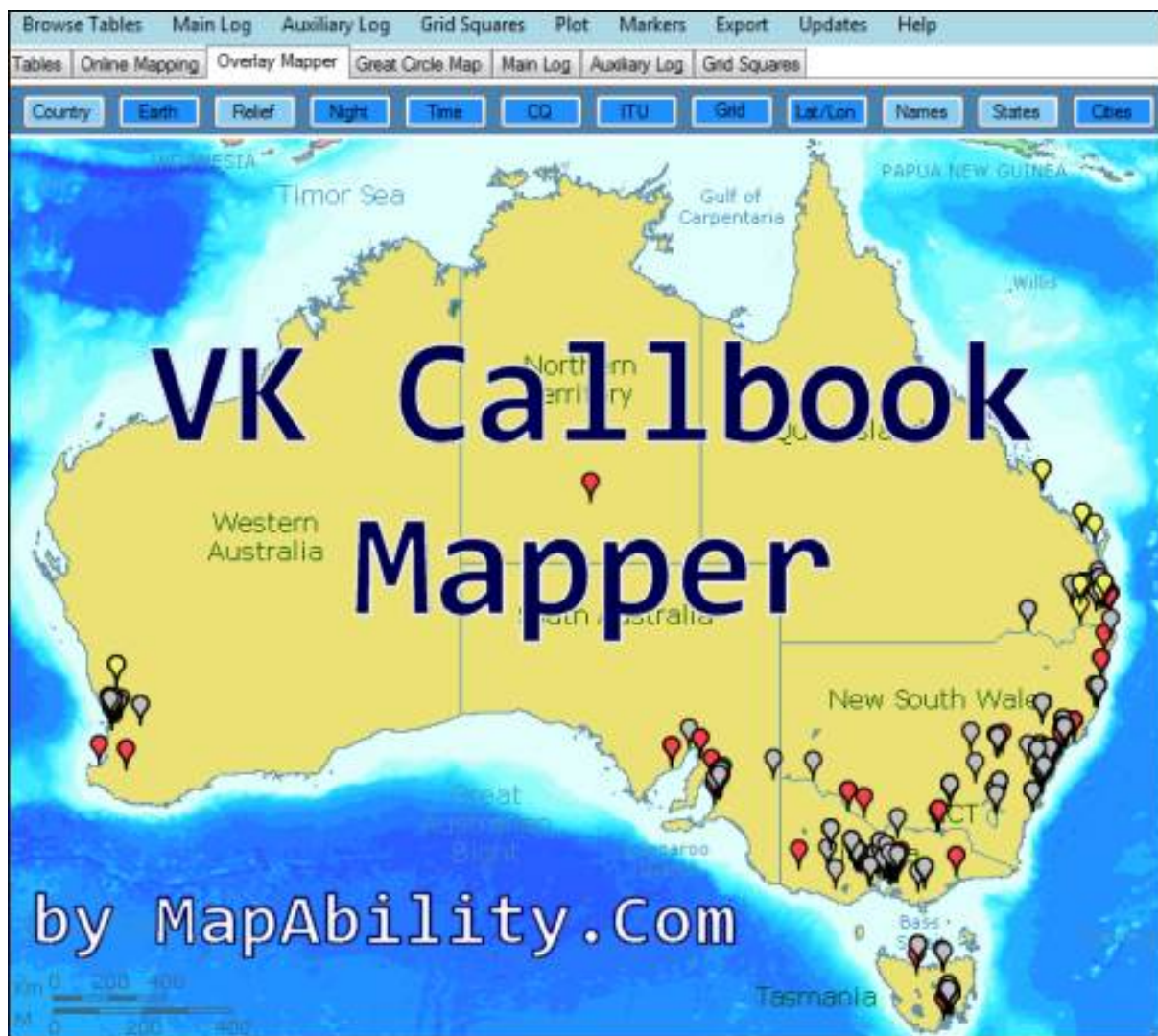
<http://www.apostrophe.org.uk/>

32 Resources for Better Online Writing

Writing online is no easy task. Whether you write for clients or for your own business, your job includes coming up with great content ideas, ensuring articles flow well, and avoiding grammar and spelling mistakes that may undermine your content goals.

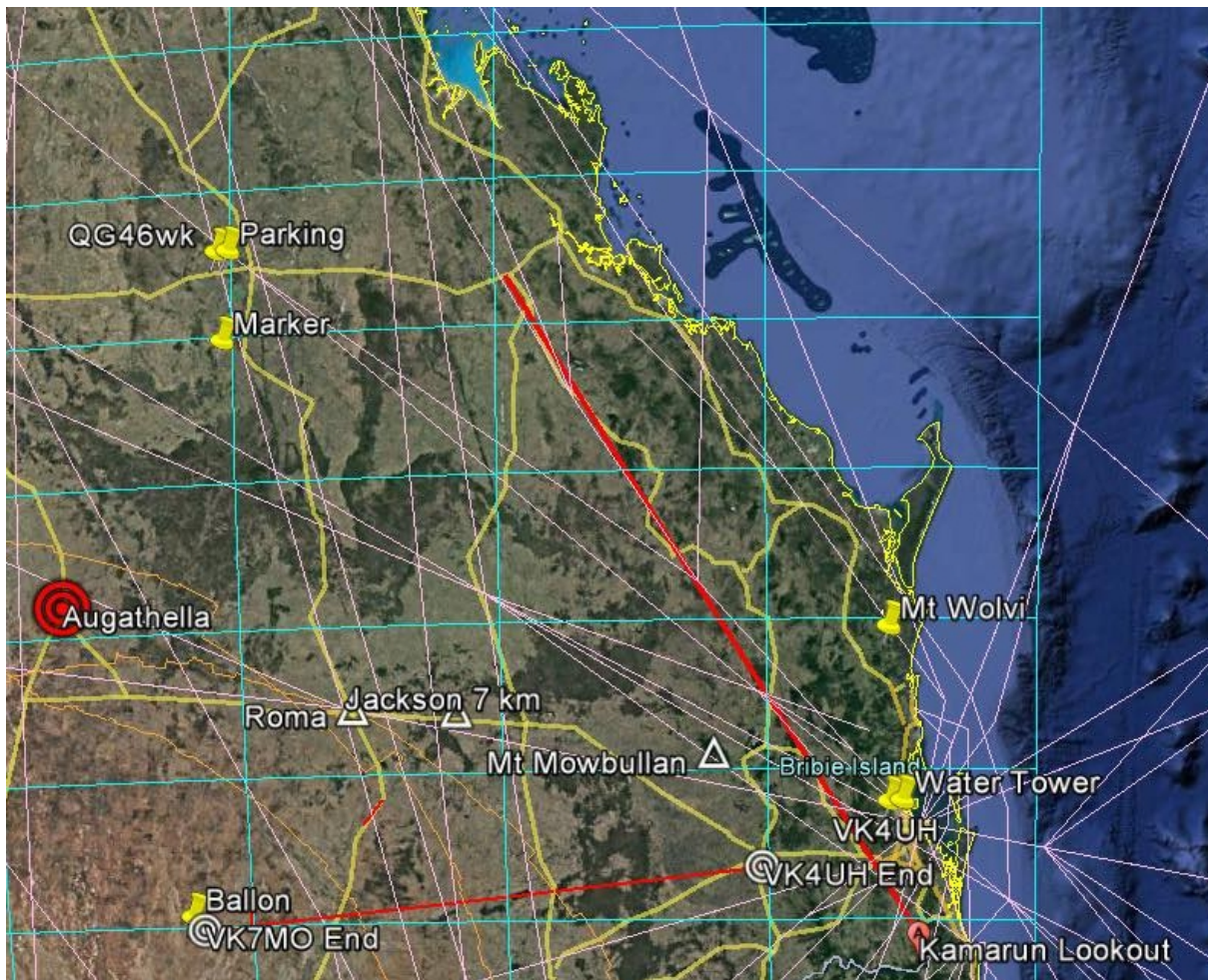
Luckily, there are plenty of tools online that can help you improve your writing skills, get organized, and help you deliver stellar content each and every time. Here's a list of 32 of the best resources for online writers.

<https://blogging.com/better-writing/>



Welcome to the 'VK Callbook Mapper' - an Amateur Radio callbook for Australia that can be updated daily, can be visualised on Overlay and Online maps, and can be spatially queried and compared against other data tables (9 supplied), imported lists (many types), ContestRadar, and your own ADIF or Cabrillo logs.

<http://www.mapability.com/ei8ic/vkcallbook/index.php>



Brisbane VHF Group news!

Friday June 8th 2018 Col VK4MIL, Rex VK7MO and I VK4UH broke our own Queensland State 10GHz distance record by further extending our range to 573km.

This was achieved using QRA64 digital mode and SSB. Digital contact was easily possible today, we believe using background Tropo-scatter propagation and then SSB using aircraft scatter. Digital signals were received at the -15dB level and SSB at the 5/1 5/2 level when aircrafts were in the optimum position.

600mm dish and 60 watts at the VK4UH/p site and 1200mm dish and 90 watts at the VK7MO/p4 end of the link.

Kevin VK4UH
Via Facebook

<https://www.facebook.com/groups/812989172208441/>

Radio Mobile Prediction Software

A nifty freeware bit of (windows) software for hams and other radio people is called "[Radio Mobile](#)". This tool allows you to simulate and map predicted coverage of your location using terrain and clutter data and maps expected coverage into Google maps.

<http://www.vk3bq.com/2013/12/01/radio-mobile-prediction-software/>

ACMA Radcom Database

Register of Radiocommunications Licences

http://web.acma.gov.au/pls/radcom/register_search.main_page

2m SSB

Sunshine Coast 2m SSB net

19:30 Sundays on 144.300 MHz

Don't just use your equipment on field days; come up on air every Sunday.

Brisbane 160m net

Monday nights at 7:30pm local 1.848 MHz. LSB

SEQATV Club Net

Wednesday nights

7:30 PM EST on VK4RRC 146.925MHz repeater

2018 dates

July 21, Caboolture Hamfest

September 8, SUNFEST at Woombye <http://www.vk4wis.org>

November 10, GCARS Hamfest, Albert Waterways Community Hall <http://www.gcars.com.au>

VK & ZL Ham Fests & Events for 2018 <http://www.vk4ice.com/hamfests.htm>

Contests 2018

VHF-UHF Field Days

Summer 2018 – Saturday 13 and Sunday 14 January.

Winter 2018 – Saturday 23 and Sunday 24 June.

Spring 2018 – Saturday 24 and Sunday 25 November.

Summer 2019 – Saturday 12 and Sunday 13 January.

Winter 2019 – Saturday 22 and Sunday 23 June.

Spring 2019 – Saturday 23 and Sunday 24 November.

Summer 2020 – Saturday 18 and Sunday 19 January.

Winter 2020 – Saturday 20 and Sunday 21 June.

Spring 2020 – Saturday 28 and Sunday 29 November.

<http://www.wia.org.au/members/contests/vhfuhf/>

QDG information

QDG meeting dates 2018

January 19

February 16

March 16

April 20

May 18

June 15

July 20

August 17

September 21

October 19

November 16

December 21

Unless otherwise noted, QDG group general meetings are held on the third Friday of the month at the **Chermside Library**, Brisbane.

Doors will open at 7:00pm for a meeting start of 7:30pm.

QDG Membership

QDG Membership is presently free.

As of June 2017 the QDG has 71 members.

Information and a list of members are up on the web site <http://www.qdg.org.au/qdgmemb.htm>

Membership forms are on the web site.

QDG Membership services

Members receive additional 'Digipeat Extra' emails and invitations to other club activities not included in the Digipeat newsletter.

Sound Card to Radio Interface

This computer to radio interface can be used for any audio mode including voice. The SCI provides isolation to remove earth loops as well as providing switching and level adjustment. Contact Richard VK4ZA on 07 3376 5231, email richatkn@tpg.com.au or via the QDG web site. Please contact Richard if you are interested in a dual interface PC board or a mark 2 version with modified connections.

Alan Simpson memorial home brew competition

August QDG general meeting <http://www.qdg.org.au/qdgmcs.html>

QDG club contacts

Club contact: Alan Wills VK4NA
Digipeat Editor: Alan Wills VK4NA
Web site: Alan Wills VK4NA
Web site hosting: Tim O'Donohoe
Supper: Alan Wills VK4NA
JOTA: John VK4CJO
Phone: Alan Wills VK4NA 61 07 3491 8032
Mobile: 0401 716 778
Twitter @VK4NA

Email: qdg@qdg.org.au

Web site: <http://www.qdg.org.au>

Digipeat <http://www.qdg.org.au/qdgdigi.htm>

QDG
11 Kroning Court
Petrie QLD 4502
Australia

South East Queensland ATV group Information

SEQATV meeting dates 2018

Please check the SEQATV [Web site](#)

Unless otherwise noted, SEQATV group general meetings are held on the first Tuesday on the even months at the Redcliffe Club rooms, that is every second month, please see the club Web site for details.

The club is located at MacFarlane Park in Klingner Rd, Kippa Ring.(UBD Map 91 Ref G 1)
<https://www.google.com.au/maps/place/MacFarlane+Park,+Kippa-Ring+QLD+4021/@-27.2214151,153.0882619,17z/data=!4m2!3m1!1s0x6b93e5f47d867511:0xe926a70030364326>

SEQATV group Membership

SEQATV group Membership is set at the AGM, please contact the secretary for the current fee.
The membership fee remains at \$20.00 for 2016

SEQATV group Membership services

Members receive additional 'Amateur Eye Extra' emails and invitations to other club activities not included in the Digipeat or Amateur Eye newsletters.

SEQATV Club Net

Wednesday nights

7:30 PM EST on VK4RRC 146.925MHz repeater

The SEQATV group Officers

Elected officers:-

President: Arnold Youngberg VK4SU

Secretary: Bruce Jones VK4EHT

Treasurer: Andy Beales VK4KCS

Coopted Officers:-

Callback Officer: Peter Jones VK4YAC

Vice President: Alan Wills VK4NA

Assistant Secretary Bill VK4ZWJ

Additional coopted officers will be added as required.

SEQATV group Contact Information

South East Queensland Amateur Television Group

Postal address now 129 Prior St, Tarragindi. 4121

Amateur Eye (club mag) Phone: Alan Wills VK4NA 61 07 3491 8032

Email: secretary@seqatv.org

Web site: <http://www.seqatv.org/>

Enjoy your hobby!

73 Alan VK4YAR / VK4NA

*** Queensland Digital Group ***

*** SEQATV group ***

** Supporting Radio Communications in VK4 **