*** QDG DIGIPEAT August 2016 ***

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

August QDG Meeting

The Next QDG general meeting will be held on Friday August 19 at the Redcliffe club rooms.
Doors will open at 7:00pm for a meeting start of 7:30pm.
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

Meeting topics

Linux presentation by Andrew VK4TEC

Basic Linux commands

Alan Simpson memorial home brew competition

The award is open to QDG members.
Alan VK4AAE was one of the founding QDG members; he always strived to do his best in any endeavour.
This competition is to be judged by members present at the August QDG general meeting each year.
The best quality, most well built or most innovative radio related home built project you have personally assembled will be judged by members present at the meeting.
Your project may consist of hardware, software or firmware and could be anything from lines of computer code to an antenna tower or your very own fully functional TARDIS.
The first, second and third place winners will receive a certificate to frame and put on your shack wall.
Bring your project to the meeting!

NEWS FROM THE SEQATV GROUP

New web site

Please check out the new Web site for the latest information and contact details.
http://seqatv.org/

Links to Raspberry Pi information
http://ww1.raspian.org/

472kHz.org
The objective of this website is to provide information about the 472 kHz (or 630 m) ham band, for newcomers as well as for advanced users.
http://www.472khz.org/pages/about-472-khz/getting-started.php

500 kHz Projects - Transceivers
Build a transverter for the new 630m amateur band
http://www.pg1n.nl/articles.php?lng=en&pg=521

600M (472Khz-479Khz) Transverter V2
http://www.vk3xdk.net46.net/1_31_600M-472Khz-479Khz-Transverter-V2.html

472 KHz 630m
We got the new 472 KHz band in Jan 2013. So it nice to have a new playground to run around that has new, shiny and different toys to play with.
http://vk2dag.com/static/630m

472 kHz Antenna
https://www.george-smart.co.uk/wiki/472_kHz_Antenna

SeaPac 2014 630m talk
http://rudys.typepad.com/files/sea-pac-2014-presentation.ppt

Server Fault is a question and answer site for system and network administrators.
http://serverfault.com/

VK3XDK

Circuits, board and component supply for radio projects
http://www.vk3xdk.net46.net/

Gippstech presentations

A precis of the presentations at Gippstech 2016 on the wordpress blog:
https://vk7tw.wordpress.com/2016/07/15/gippstech-2016/?iframe=true&theme_preview=true

MIL-C-17 is the government specification document used to standardize coaxial cables; it has been in use since the 1940's. In the many revisions made to MIL-C-17 over the years, the familiar RG part numbers were superseded by M17 part numbers during the 1970s. The benefits of these more recent revisions are discussed under the following headlines. The most recent and therefore applicable revision to MIL-DTL-17 is Revision H.

Pages 29 through 39 contain a complete listing of all current M17 cables. For engineering reference, pages 45 through 61 contain the old RG tables. Attenuation and power handling characteristics tables are presented on pages 40 through 44.

http://disti-assets.s3.amazonaws.com/cdmelectronics/files/datasheets/4697.pdf

Hardware and software site.
http://www.dl4jal.eu/

BG7TBL

The BG7TBL USB RF Signal Generator is a PC-based function generator. It has no external controls, requiring a USB connection to a computer.
https://sigrok.org/wiki/BG7TBL

Switching From Windows to Nix or a Newbie to Linux – 20 Useful Commands for Linux Newbies
http://www.tecmint.com/useful-linux-commands-for-newbies/

Important Linux Commands

https://www-uxsup.csx.cam.ac.uk/pub/doc/suse/suse9.0/userguide-9.0/ch24s04.html

Basic Linux Commands

http://www.comptechdoc.org/os/linux/usersguide/linux_ugbasics.html

** My top 15 linux commands ** that everyone should master!

https://community.linuxmint.com/tutorial/view/778

50 Most Frequently Used UNIX / Linux Commands (With Examples)
http://www.thegeekstuff.com/2010/11/50-linux-commands/?utm_source=feedburner

What are some of the best Linux tutorials online?

I cannot state enough how bad advice it is for someone seriously wanting to learn Linux to install a distribution with a desktop environment (GNOME/KDE) and Xorg installed by default !
https://www.quora.com/What-are-some-of-the-best-Linux-tutorials-online

Home Network, Wireless Network and Computer Networking Made Easy
http://www.home-network-help.com/

Linux SurvivalTM is a free tutorial designed for people who have little or no experience with the Linux operating system. Even though Linux has hundreds of commands, there are only about a dozen which you need to know to perform most basic tasks. These are the commands you will learn in the first and second modules.
http://linuxsurvival.com/

1296 MHz Loop yagi Kit, Model DSE2355LYK
1.25 to 1.30 GHz, 21dBi gain
http://directivesystems.com/1200-mhz/23-cm-1250-1300-mhz/dse2355lyk/

This amateur radio website explains how to use the free AGWPE utility program to send and receive packet data using the sound card of your PC. Note that AGWPE is a Windows-only program.

This website, which is hosted on SV2AGW's web site, focuses on support for the sound card packet features of AGWPE. Although it does not attempt to provide support for other sound card packet programs, it has general information which is applicable to all sound card packet operations including:

    some ideas for interfaces to connect sound devices to ham radios
    resolving problems with packet operations
    ways to use packet today
    information about packet programs (clients) that can use AGWPE as a host for sound card packet operations
http://www.soundcardpacket.org/

Supplier of custom designed, high performance quartz crystal filters for communications receivers and transceivers...and more!
http://www.inrad.net/home.php

Lots of Raspberry Pi projects and other stuff for your inner geek.
https://blog.adafruit.com/

Decoding Digital Voice (P25, DMR, NXDN, D-STAR) with DSD

The RTL-SDR software defined radio combined with SDRSharp and a program called "digital speech decoder" (DSD) can be used as a radio scanner to easily and cheaply listen to unencrypted digital radio voice conversations.

Digital radio voice communications are becoming more commonly used in the radio spectrum. This is due to the various improvements offered over traditional analogue voice radio systems. Unfortunately for radio scanner hobbyists, digital radio is difficult to receive, as special radio scanners which can be expensive are required to decode the digital signal. Additionally, digital radio systems can be encrypted making it impossible for communications to be decoded by a hobbyist. However, most users of digital radio do not bother to encrypt their systems as it can introduce lag, monetary expense and extra battery drain in portable radios.

The most common digital speech codec is APCO P25, which DSD is able to decode. DSD is also capable of decoding other common digital codecs such as DMR/MOTOTRBO, NXDN, D-STAR and ProVoice.
http://www.rtl-sdr.com/rtl-sdr-radio-scanner-tutorial-decoding-digital-voice-p25-with-dsd/

Wire Antennas for Ham Radio

There are a lot of antenna on this site.
http://www.n4lcd.com/wireantennas/

Free software for your computer
http://www.iobit.com/en/index.php

Zero Days: Why the disturbing Stuxnet documentary is a must-see

Zero Days is a documentary by Oscar-winning filmmaker Alex Gibney about the cyberwarfare Pandora's Box that was opened with the Stuxnet malware. Find out why Jack Wallen highly recommends the film.
http://www.techrepublic.com/article/zero-days-why-the-disturbing-stuxnet-documentary-is-a-must-see/

Raspberry Pi – What is needed?

+ Raspberry Pi, I recommend a version 3.0 if you can.

+ A power supply that can support about 2 amps at 5 volts and has a Samsung connector

+ A HDMI capable screen

+ A USB mouse

+ A way to connect to the internet, either your home WiFi network, or Ethernet cable will help

+ A USB keyboard

+ A MicroSD card

+ A MicroSD card adaptor

+ An SD Card reader

+ A windows laptop

+ An internet connection

Raspberry Pi - How do I get started?

+ Place your SD card with the micro SD card into the windows PC and use the SD card card formatter tool, format the card.

+ Surf your windows machine to the https://www.raspberrypi.org/downloads/ and grab the NOOBS , now you do the full install or internet install – your call if you have WIFI or ethernet to the internet, select lite.

+ You need to DRAG and DROP the whole NOOBS directory structure onto the newly formatted SD card

+ Now you are ready to hook up your HDMI screen, USB keyboard, and USB mouse to your Pi

+ Place the MicroSD card from the windows PC with NOOBS on it into the Raspberry Pi

+ Power up the Raspberry Pi with the micro USB power supply.

+ There should be a colourful screen show up on your HDMI monitor

+ The raspberry Pi should boot up to NOOBS (Full) or NOOBS (LITE) – where you can select what operating system to install.

+ Select Raspbian as the operating System

+ Setup up your wifi network if you selected LITE Raspbian install

+ Let the Raspian OS install (this will take about 30 minutes)

+ You will be asked a few questions as part of the build process, make sure you select "US keyboard" UTF-8

+ Let the Raspberry PI reboot when it is done.

+ The Raspberry Pi should now boot up to a GUI

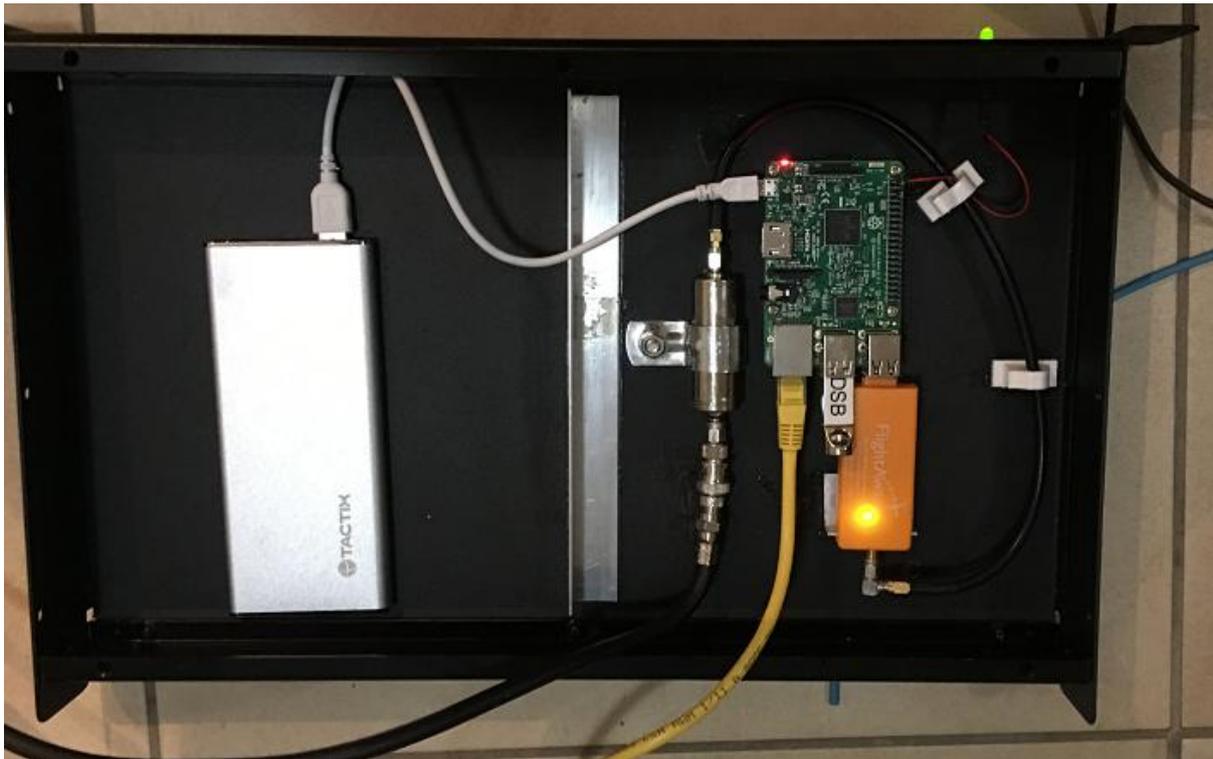< Further works on the Raspberry Pi require more advanced tutorials >

Andrew VK4TEC

How to safely access and navigate the Dark Web
Is your business data on the Dark Web? Learn how to find out if you've been compromised in this step-by-step guide to accessing the underbelly of the internet.
http://www.techrepublic.com/article/how-to-safely-access-and-navigate-the-dark-web/

Wamuran ADS-B

+ I placed a Raspberry Pi , RTL SDR receiver, 1090 MHz filter and 1090 MHz Antenna at the Wamuran site.

+ Adrian was kind enough to connect my Pi to the digital link to Brisbane.

+ I started out with a telnet link to the site to collect data and provide images and do statistics.

+ The link was intermittent

+ I decided to log files on site at Wamuran and FTP push them to my Web site – this is now bullet proof.

+ A script on the Wamuran ADS-B site gets rid of log files older than 5 days.

+ So all the Wamuran site does now is receives planes and logs files locally, and does an hourly FTP PUSH.

+ There still exists the web page at port 8080 that is supposed to show a map and table or planes but I have been unable to get this working.

+ I plan to provide statistics, images, graphs, archive logs, at my home server instead. To take the load off the Wamuran ADS-B site.

+ I am interested on daily signals, coverage, and aircraft that are playing up.

+ The only improvement I would do at the moment is perhaps raise the antenna and add a little UPS to the 240 V to 5 Volts adaptor.

+ I would like to thank Peter Fauth and Adrian for their assistance in my little project and I expect to add greater features as we go and now the link is stable.

Andrew VK4TEC

Drones

+ I continue to gain experience with the DJI Phantom 4

+ It has collision avoidance

+ It can fly for 25 minutes

+ It can take 4k video and photos

+ It can follow an object

+ It can do a 360 pan around an object

+ The maximum speed is 70 km's per hour

+ The tested range on the weekend was 2.2 km line of site.

+ I stream the video live to facebook

+ The video format if MP4 or MOV

+ The image format is JPG or RAW

+ The quad copter comes home if it looses reception or low battery or you turn off the controller.

+ The quad copter is GPS / GLONASS / Baro IMU orientated

+ The Quad copter uses LightBridge video links.

+ I noticed a drop out out the front of a radio stack

+ The Video are stored on a Micro SD card

+ I can charge three batteries at once

+ It has its own camera and is gimbal stabilized.

Andrew VK4TEC

Wamuran ADS-B receiver (picking up planes)

There exists a Raspberry Pi V3.0 at the Wamuran repeater site with an RTL SDR dongle and a 1090 MHz filter.
A commercially available ADSB 1090 MHz antenna is mounted outside.
Quad core coax is used for RX only
The Raspberry Pi is running off a 240 V to 5 Volts samsung style lead. (Need to add UPS **)

The Raspberry Pi is running Raspbian LINUX and a program called dump1090

Dump1090 allow the user to see a map, a table of planes, and also has some data ports

Port 8080 : Web server
Port 30003: SBS plain text format plane data
Port 30002: Raw AVR data usable with many programs such as ADSBScope for windows

NTP has been enabled to keep the time up to date on the raspberry Pi

The Raspbery Pi links back to Brisbane on a uWave link.

The Ethernet port is used on the Raspberry Pi

The receiver can see abour 250 NM which is very good.

I have written a local perl file to log hourly sbs data to /adsb_logs

Crontab is scheduled to delete any sbs_log files older than seven days.

Crontab is scheduled to FTP push the LAST hour at 10 past the hour to my home server. (Takes a few minutes)

Down at my house I do pictures and stats and the like.

You can see some work going on at my house. http://59.167.159.165/

Or my main website http://www.tech-software.net/

How to see the Wamuran ADS-B data at your place live.
(We are going to connect to Wamuran on port 30002 and use ADSBScope)

Windows

01. Google a program called ADSBScope
02. or go here http://www.sprut.de/electronic/pic/projekte/adsb/adsb_en.html
03. Click on "Downloads"
04. Download and save the file called "Latest Version 2.7" the 15 MB ZIP file
05. Open the ZIP file and you should see "adsb_all"
06. Extract the zip file so you end up with a directory called "adsb_all"
07. Go into "adsb_all" directory and then "pc_software"
08. Go into a directory called "adsbscope" then a directory called "27"
09. Then run a program called "adsbscope27_16384.exe"
10. The next thing you have to do is tell ADSBScope what host and port to connect to for the ADS-B data
11. Click on the program called "adsbscope27_16384.exe"
12. This will start up in europe. - use the arrows to move down to Brisbane
13. Ok, now go to "other" on the ADSBScope menu bar
14. Select "Network", select "Network setup"
15. In Network setup, fill in "RAW data client" box down the bottom Portnumber = 30002 (this is the Wamuran AVR data)
16. Next fill in the URL, set it to "athome.aecs.net.au" - this is the Wamuran ADS-B TCP/IP network
17. Data format is "normal" please do not worry about any other settings - just get the host and port right
18. Click "close"
19. Now click once again on "other" on the ADSBScope menu bar
20. This time click "other - Network - RAW data client active"
21. Your screen should come to life with planes
22. There is a little white box to the left of "select COM port" if you click in there you should see the RAW data wizzing in.

Good Luck

Andrew Rich VK4TEC vk4tec@tech-software.net

http://spaceweather.com/

VK Contest Log

The home of VK Contest Log (VKCL)
specialising in Australasian contests but also covering some international ones too.
http://www.mnds.com.au/vkcl/

N1MM Logger is the world's most popular ham radio contest logging program. For CW, phone and digital modes, its combination of contest-optimized features is unmatched. The program can be used with Windows XP (sp3) / Vista / Seven / Eight / Ten
http://n1mm.hamdocs.com/tiki-index.php

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.

SEQATV Club Net

Wednesday nights
8:00 PM EST on VK4RRC 146.925MHz repeater

2016 dates

August 19 QDG general meeting; Alan Simpson memorial home brew competition www.qdg.org.au

August 28 SARCfest, to be held at the Richmond Hill clubrooms east of Lismore http://sarc.org.au/

September 10 SUNFEST, Woombye School of Arts, Blackall Street, Woombye (UBD Map 66 F12)
Doors open at 9am. http://vk4wis.org/

September 23-25 VK4 Central Highlands Amateur Radio Club AGM weekend
Lake Maraboon Holiday Village, near Emerald.   http://www.tarc.org.au/

September 30 to October 3 VK4 Cardwell Gathering Long Weekend, Beachcomber Motel
http://www.tarc.org.au/

October 14th, 15th & 16th 2016 JOTA-JOTI http://jotajoti.info/

Contests 2016

VHF-UHF Field Days

August 13-14 Remembrance Day (RD) Contest
http://www.wia.org.au/members/contests/rdcontest/

Aug 27-28 36th ALARA Contest http://www.alara.org.au/contests/

QDG information

QDG meeting dates 2016
January 15
February 19
March 18
April 15
May 20
June 17
July 15
August 19
September 16
October 21
November 18
December 16

Unless otherwise noted, QDG group general meetings are held on the third Friday of the month at the Redcliffe Club rooms
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

QDG Membership

QDG Membership is presently free.

As of June 2015 the QDG has 65 members.
Information and a list of members are up on the web site http://www.qdg.org.au/qdgmem.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 www.qdg.org.au

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
37 Evergreen Parade
Griffin QLD 4503
Australia

South East Queensland ATV group Information

SEQATV meeting dates 2016

Please check the SEQATV Web site

Unless otherwise noted, SEQATV group general meetings are held on the first Tuesday on the month at the Redcliffe Club rooms
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
8:00 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
PO Box 643 Kallangur, Qld 4503, Australia

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

Email: secretary@seqatv.org

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

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Enjoy your hobby!

73 Alan VK4YAR / VK4NA

*** Queensland Digital Group ***
***   SEQATV group   ***
** Supporting Radio Communications in VK4 **