GYMPIE COMMUNICATIONS & ELECTRONICS GROUP INC.

2nd. Quarter 2012 NEWSLETTER

PRESIDENTS REPORT

Welcome to our new member Kerry VK4LKE.

Kerry contributed to our Show and Tell at a Wednesday morning meeting with a home made Stirling engine, the engine runs for about 10 minutes on a cup of hot water. (Hoping for a write-up on Kerry's Stirling Engine in a future issue of the Newsletter)

Regarding Show & Tell items Bob will take some beating with his collection of photographic equipment. (see later article)

At the time of writing we have not received a reply from the railway society. When this does eventually happen we will be very busy with building repairs and establishing operating equipment.

Club fund raising continued with a successful BBQ at Mitre 10 on Sunday 15th. Thanks Barry VK4KKN and the other volunteers for your efforts. The signage made a big difference.

Next month will require a mammoth effort, with BBQ's on 5th & 20th May.

On Friday 18th GCEG will be providing the manpower for a BBQ at Mitre 10 when some of the cast from the TV show The Block will be present for a major presentation. Mitre 10 are providing all the consumables and GCEG will have the option of selling drinks to compliment the sausages, Mitre 10 will then make a financial contribution to GCEG

Ed VK4ABX

NEWS ITEMS

1. Next Monthly Meeting of the GCEG Inc. will be held on 8th. May 2012.
    2. BARCFEST will be held at the Mt. Gravatt Showgrounds on the 26th. May 2012.
        3. Usual Wednesday morning meeting at 10am, tea & coffee & a chit chat.

OFFICE BEARERS

President: Ed Fisher VK4ABX
Treasurer: Barry Molkentin VK4KKN
Secretary: Isaac Neumann VK4FIBN

SOFTWARE DEFINED RADIO, THE FUTURE OF AMATEUR RADIO.

We all know the principle of the superheterodyne radio. Mixing two frequencies result in forming primary products of the sum and difference of the frequencies and many more at lesser levels. If we wish to use an intermediate fixed frequency of 455kHz, then mix in a carrier frequency 455kHz higher or lower. The RX intermediate fixed frequency of 455kHz can be tuned for optimum and used to receive any frequency with selection of the appropriate injection carrier frequency. Sounds simple but careful design is needed to eliminate unwanted responses.

If we inject a frequency directly into the mixer pass band, then we will produce + and – audio frequencies directly. This is often called a direct conversion receiver. It has had little interest in the past because it required a high stability VFO to tune the signals and had no processing software. If a high stability fixed frequency oscillator (xtal etc) is used, which is easy with modern methods, then the audio sidebands will become higher in frequency as the frequency difference increases. This makes them unusable for direct listening as they could be at supersonic frequencies.

With new high quality soundcards, frequency responses to 192kHz are easily available without breaking the bank. Thus the mixing with a fixed frequency carrier will produce a 96kHz response on the side band selected. So 96kHz of signals are available. SDR software can capture any portion of this spread and so lock onto any signal within. Having only single conversion gives this system advantages over systems using multiple conversions. Filters also operate at audio frequencies and are very simple to design for premium performance.

Many simple kits are available for experimentation. 40M or 20M RX only kits can cost only $12.

I hope that prepares you to digest the following; these are some extracts from the internet with a bit of my own:

A software-defined radio system, or SDR, is a radio communication system where components that have been typically implemented in hardware (e.g. mixers, filters, amplifiers, modulators/demodulators, detectors, etc.) are instead implemented by means of software on a personal computer. While the concept of SDR is not new, the rapidly evolving capabilities of digital electronics render practical many processes which used to be only theoretically possible.

A basic SDR system may consist of a personal computer equipped with a sound card. Significant amounts of signal processing are handed over to the general-purpose processor, rather than being done in special-purpose hardware. Such a design produces a radio which can receive and transmit widely different radio protocols based solely on the software used.

In a nutshell, SDR allows for limitless filtering and processing of signals. In the past you had rigid hardware limitations on filtering and as an end user, you were stuck with whatever was shipped as production. SDR allows limitless possibilities at the mere twiddle of a few bits.

A few years ago I entered the SDR revolution with the Flex 3000. Suffice to say, I sold my own reliable FT-1000D as there was no comparison with performance. All that I know have done the same; sold their top of the line rigs. I would not wish to go back to the conventional systems. The only criticism of these SDR radios is almost exclusively from those that do not own or have not operated one.

Below are a few sites that are interesting.

http://www.flex-radio.com/Products.aspx?topic=F3k_features

http://www.flex-radio.com/

Erik VK4AES

Front View

Baofeng UV-5R Dual Band Transceiver

Following on from review I did on the UV-3R from the same company it is the turn of their latest offering, however before doing that I would just like to recap on the 3R having had more time with it at the coal face so to speak. My positive comments have not changed and I have found this very compact rig an ideal companion when monitoring at home or whilst in and around town. With just 2W of output, at times, this is a limiting feature, but all in all it still gives good results from most locations in town. I have noted one other matter which is at times annoying, and that is it is very sensitive to any local electrical, or spurious RF noise, which can at times override the higher squelch settings.

Now to the 5R which I have had for a couple of weeks now and following the arrival of the programing lead and software I have had a good chance to check the features of this new transceiver.

Again as with the 3R the new offering arrived well packed and took just on 9 days to get here which is excellent service. The price differential between the 3R and the 5R was just on A$9.00, so to be frank it is an even better option if features and price are a consideration. The 5R is a whole lot bulker than the 3R, so not quite as convenient I guess. This new rig comes with a DTMF key pad so accessing an IRLP nodes around the world is well within it capability and sure sets it aside from the 3R. This radio comes with DSP as standard and has 40 menu set items giving considerable control of all of the features this radio comes with.

I found the instruction book easy to read and understand, however as I have noted, having the programing cable and software is a distinct advantage. Note the software is easily downloaded from the internet and the programing cable is the same as the Wouxun KGUV6D that many of you already have. Once downloaded remember to select the correct language otherwise the headings will confuse you, well it did to me until Isaac, VK4FIBN, pointed me in the right direction.

Another feature over the 3R is the power output which is up from the 2W, high and low, on the 3R to 4W, variable to 1W, on the 5R which makes getting into the repeater less of a challenge when in some compromised locations. The battery is a 7.5V rechargeable Lithium Ion and is charged either with the supplied charging dock or via the wall charger supplied

with the radio, and battery life is excellent. All inputs to this radio are announced and confirmed in clear English as is the mode when you first turn it on.

This radio comes with a substantial range of features and way too many to cover here so I will stick to the ones I use and leave the others for a later review.

The information screen is clear and the A/B band and frequencies are easy to see, however some of the other icons used can be a little challenging for most I would suspect. Initial program of the up to 128 memory channels is a slow process using the keypad and menu, so having the programing cable and the software is a distinct advantage and frankly the only way to get this done, so avoiding the frustrations attached to doing it manually. It has been noted that when programing from the keypad the repeater offsets are not being held in memory even when correctly selected. This is a fault that to date has not been resolved however if you use the programing software this is no longer an issue as repeater offsets are recorded in memory as selected.

This photo shows the UV-3R on the left and the 5R on the right, however the 3R in this case is using the alternate higher gain antenna.

In conclusion as I previously mentioned there are many features in this radio that would need considerably more attention paid to but in the main I have concentrated on the prime ones that most of us would be given to use. This looks to be a neat and compact H/T having the advantage of more memories menus features and DTMP capability than the 3R, and, would compete well against other brands in the market at a stunningly lower price. So if you need the features then this one is well worth considering.

 Bob Dixon VK4MR

Fundraising.

As you are all aware the Group is always in need of funds to be able to continue operating, with rent, licence fees, insurance, interest on loan, repayment of loan being significant continuing expenses.
At the moment the BBQ at Mitre 10 and membership fees are the only regular incomes the Group has.
Sale of VHF radios has been a useful exercise but that is just about finished and we need members to put their thinking caps on and come up with some more useful ideas.
Just to get members going I have one suggestion , how about a garage sale, this is a sure fire way of raising money. Obviously without items for sale the Group cannot follow this route in its normal format but if members could bring items they want to sell and be prepared to donate a percentage of the sale to the group then this becomes a very good fundraiser. I for one have quite a few things I would like to dispose of but do not enough items to warrant a garage sale of my own and I am sure other members will be in a similar situation also having gear they would like to dispose of.
Some of the items I would have for sale or donate are:
Acer 17" LCD Monitor.
Canon Power Shot A30 digital camera
Mini Video Camera
Steam Vapourizer
5.25" External sub-system drive.**
Fellowes paper shredder.**
Envi Cost Control Power Monitor with two transmitters**
Climate Smart Power Monitor**
** These items I would donate with all proceeds going to the Group.**

Having Googled "fundraising in Australia" here are some of the links which might prompt you to come up with other ideas.

http://www.fundraisingideas.com.au/

http://www.fastfundraising.com.au/

http://www.australianfundraising.com.au/

If you do think of something then put it to one of the committee members, raise it for discussion at the Wednesday morning meeting or perhaps the Monday night Net.

Articles For Future Issues
Floods at Clermont – Greg Weir VK4VBU
Wednesday Morning Meeting – Show & Tell - Bob Dixon VK4MR
EasyPal Digital SSTV - Erik Sundstrup VK4AES
???????????? – A Very Welcome Member of the Gympie Communications & Electronics Group