Brisbane/SEQ Microwave Activity Day in May 2012

6th May 2012

See also http://www.vklogger.com/forum/viewtopic.php?f=31&t=10549 (http://www.vklogger.com/forum/viewtopic.php?f=31&t=10549)

In recent years the Brisbane VHF Group has organised a couple of successful microwave activity days. Basically, these have been on Sunday mornings for a few hours and there has been good participation by numbers of stations on various microwave bands,1296 MHz and above.

For operating times (local time) on different bands, the following nominal breakdown was used :

9:30 - 10:30 1296 MHz

10:30 - 11:30 2403 and 3400 MHz

11:30 - 12:30 5.7 , 10GHz & above

The following stations were obviously active :

VK4OE/P : Springbrook QG61PS

VK4CRO/VK4MJF : Mt Gravatt QG62MK

VK4UH/VK4IIO : Mt Glorious QG62GL

VK4EA : Mt Glorious QG62JQ

VK4CDI/VK4TJ : Toowoomba QG52XI

VK4ADC : Algester/Brisbane QG62MJ

The activities started on 1296 with a flurry of activity as all of the above stations had equipment operating on this band. There were a few others expected to be around but that didn't eventuate. Liaison was arranged primarily through 146.500FM.

Those with 2.4GHz gear then moved to 2403.150 SSB and I immediately found "buzzing noises" across the band. I initially thought it may have been instability inside the 2403 gear but it disappeared when I turned the gridpack in certain directions so I am guessing that it was actually a WLAN somewhere fairly close to me. It was the only reason I didn't make more contacts on 2403 - I just couldn't hear the stations above this QRM. (The location I used is being re-developed for more housing so that is the last time at that spot and maybe the next portable QTH (i.e. for the Winter VHF/UHF FD in June) won't have the same problem.) Even so, Doug VK4OE and I exchanged 5/7 and 5/8 reports for a two-way QSO over the 75KM path. I could hear a couple of the others in the buzz from time to time but they were competing against a buzz-signal that showed as S9 on the IC706 IF transceiver, and they would have been (at best) the same or a lower signal level.

Next band to be activated was 3.4GHz. I had the first real contact on 3400.150 MHz since I built the transverter, even though it was a little strange.. Doug VK4OE sent CW (he forgot his FT817 hand mic..), I used SSB but , even so, it was a confirmation that all was well with my homebrew gear. I could hear VK4CDI/P weakly (106KM path) but he could not hear me so a QSO was not achieved.

The others with 10GHz gear achieved some contacts on 10368.150 SSB. I took the opportunity to start packing up the 1296, 2403 and 3400 antennas since I could only listen to the liaison comments on 146.500.

Finally Doug VK4OE and I shifted to 5760.160 FM and had a two-way contact with 55 and 59 reports exchanged (75KM path). I couldn't hear Kevin VK4UH/P, and vice versa, probably because of the low power levels involved in each direction. I had about 20mW to the horn antenna, Kevin apparently had a power level around 200mW on this band.

Callsigns heard/worked on the various bands today included VK4CRO/P, VK4MJF/P, VK4EA/P, VK4UH/P, VK4IIO/P, VK4CDI/P, VK4TJ/P and VK4OE/P. There were a few others active during this event but I didn't actually log them. Liaison was primarily on 146.500FM, a little on 147.000 repeater, and a little on 144.150 SSB.

It was that sort of day that makes it worthwhile getting involved in microwave and has enthused me even more towards building up my own gear for both 5.7 and 10 GHz. I doubt that it will be done before the Winter FD 2012, but maybe by the Spring FD 2012.

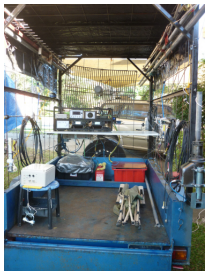
To all who participated, thanks for making it a good event.

Mouse-over for more detailed views...

Before departure, the equipment setup on the "table top". Note that it stays in this position even during the transit phase for local events. That makes the process of setting up just that much quicker as only antennas and masting need to be manipulated. The 2.4/3.4 gripdack was held onto the mesh front above the equipment by occy straps for the short ride today.

From top left : 23cm transverter, dual rotator controller, 2m/70cm manual rotary coax switch, Yaesu FT1802M 50 watt 2M FM transceiver (146.5 & 147.000).

Bottom left : microwave IF switch panel, IC706MK1 microwave IF, IC706MK2G for 144.150 SSB liaison



The view from further away shows the trailer with the masting pipes up the top on each side, the 1296 yagi at top LHS, the equipment table plus the generator at LHS bottom and the battery box at RHS bottom. The 2.4/3.4 transverter box is obvious on the work stool at left.

The blue/black work stool is there for height-extension while working on things just out-of-reach ! The cables are rolled up and held in place onto the mesh at each side with double-sided velcro loops.

Funnily enough, I didn't even get a chance to use the folding chair during the event.

This is how it looked when I arrived on site at Algester. Just a small tarp on the top of the cage to keep the sun off me this time around, rather than the full polytarp cover as used during the John Moyle Field Day.

Antennas up ! The rear mast pipe has the 2m horizontal yagi for the 144.150 liaison with the 2m/70cm whip plus ground plane on the top for 2m FM.

The front mast pipe has the gridpack plus 2.4/3.4 transverter box plus the 23cm yagi on the very top. These were carefully aligned so that if I could hear a signal on 23cm, the direction could be noted for later 2403 or 3400 contacts.

The switching of the IC706 IF transverter is achieved though this new control section. The PCB on the back of the switch switches the 144MHz IF signal, the PTT plus can output +12V for each band plus a OR-ed +12V to allow a negative voltage generator PCB to be powered only for specific bands. Behind the panel itself, the new-ish 10MHz TCXO sits flat on the base of the equipment box.

Note that the label should read 2403 and not 2304 - typo while making the label !!!!!

View into the battery box. The yellow and green heatshrinked cables are the main power feed out of the box, the yellow (positive) being fed through a 70AMP circuit breaker. The red/black shown entering at right feeds through the in-line 20A thermal breaker and is the charging connection in from the two-stroke generator.

The RHS of the trailer shows how the masting pipes and any yagis (2m one in this view) travel to & from a portable location.

The LHS view showing the 23cm yagi plus the front mast tube. The red tube in the image is the rear stabiliser bar.