

UPDATED LOWER DOWN THE PAGE TO INCLUDE THE MICROWAVE ACTIVITY / DEMONSTRATION DAY, 23RD OCTOBER 2011

Updated from QNEWS - 5th March :

Doug Friend, VK4OE PRESIDENT of the Brisbane VHF Group says they want to enable as many folk as possible, amateurs and non-amateurs, to be able to go and see microwave amateur radio in action.

"Starting just after completion of callbacks to the WIA and QNEWS broadcasts, you should find a group of us using several bands on Mt Gravatt on Brisbane's south side, or to Kevin VK4WA's place (several bands operational) at Redbank Plains in the West, or further West to John VK4JMC's place at Laidley on 1296 and 2403 MHz. On the North side of Brisbane, you can catch up with Roy, VK4ZQ who will be portable with several microwave bands. Further North again, Adrian VK4OX will be operational on 2.4 GHz from Maleny, and Wayne VK4WS will have a number of bands operational from Howell's Knob also near Maleny.

Operating with low power on 5.7 and 10.3 GHz to the East of Brisbane (yes, East!) should be Peter VK4EA on the beach at Moreton Island, an unusual and potentially interesting contact for many to make.

Primary liaison is expected to be via the VHF Group's 'RBN repeater on 147 MHz, so this repeater will be active on that morning.

Anyone can go to any of these locations to experience the ways of operating, the challenges and the intense fun of microwave amateur radio."

So again for all the latest, check in on 147.000 in Brisbane after the 9AM news!

That was how it was publicised and there seemed to be a bit of interest from microwave-oriented amateurs - plus a number of members of the public who wanted to know what the setup was for.

I went up to VK4OE's setup on Mt Gravatt, choosing that one simply because it was the closest to me. I took along Ron VK4KLC with the primary intention of seeing how "Doug did it" - that Doug, or as we quip : "the friendly Doug".. He had equipment for 1296, 2.4GHz, 3.4 GHz, 5.7 GHz, 10 GHz and 24 GHz but not all bands were used successfully.

There were only a few stations on air : Roy VK4ZQ at Mt Coot-tha, Peter VK4EA at Northgate (he didn't make it to Moreton Island due to vehicle issues), Lester VK4ALH and Adrian VK4OX at the Sunshine Coast. Kevin VK4WA was down with an illness so was missing, and John VK4JMC wasn't heard - at least by me.

{Added text (in blue) @ 19/3/11, supplied by Doug VK4OE } There were two other stations active on 10.3 GHz : Peter VK4EA operating from his rooftop at Northgate and Phil VK4IIO operating from Clear Mountain. Big signal reports were exchanged between each of us on what were all line-of-sight paths.

Phil also had an interested amateur radio newcomer present with him so, with the non-microwave blokes who visited there at Mt Gravatt, the BVHFG's aims of the day of introducing microwaves to Brisbane amateurs were well achieved!

Yes, it was a little disappointing that so many of the expected stations were not 'on' on the morning but, for those of us who were active, a good couple of hours were still had by all! [I did get a dose of sunburn, particularly on the back of my neck, but that's what happens when one is distracted by interesting/involving things.]

Even so, at one stage there were around 10 extra amateurs up looking into the intricacies of Doug's setup. I lost count of how many members of the public actually came across from the main lookout carpark to where Doug was set up at the top of the access road, at the entry to the carpark.

A group of us stayed up on site until almost 2PM (after a 10AM start), and I, for one, was interested to see Doug lower his main mast -the one mounted permanently on the top of his roof rack. This mast is under the control of a positioner from a C-band satellite dish and from fully vertical to horizontal took just 2 minutes. There is a series of photos below that show the progress.

I have also included some photos of the setup and some of the people who attended. No real captions, just peek at the images. I had hoped that I might obtain some images from other setups but none have been received at this time. I have more photos but they will have to be sorted out a little more before they can be added....





THE MICROWAVE ACTIVITY / DEMONSTRATION DAY, 23RD OCTOBER 2011, A FOLLOW-ON FROM THE "TUNE-UP" DAY OF 25TH SEPTEMBER 2011 :

AS PROMULGATED : This is the real live " out in the field" test and demonstration day for microwave gear. Different stations will be located on different hills around the great South-East, and the aim will be to demonstrate how microwaves really can be a lot of fun.

Mark the date, the 23rd of October on your calendar now, - amateur microwave demonstration day. This will be a great opportunity to test things out, compare, (and have time to rectify any issues!) before the Spring Field Day.

From the VKLOGGER topic :

Brisbane microwave activity days: Sep 25, Oct 23 (<http://www.vklogger.com/forum/viewtopic.php?f=31&t=10096>)

Sunday the 23rd is the on-air microwave activity day. The aim of the activity day is to foster and promote use of the many bands we have available above 1GHz, as well as demonstrating the special fun and experiences there are in getting gear going for these bands, and operating on these frequencies.

Things will get going at 10:00 am with a roll call on 144.150 MHz SSB. That frequency will be the main "talk back" medium during the operating times of the activity day. We'll also be keeping an eye on the Group's 2 metre repeater on 147 MHz for any potential operators who may only have that medium for "talk back". [And as you'll read in the list below, at least one station will find the Ipswich 2 metre repeater on 146.9 MHz as a better liaison channel.]

In order to accommodate the wide variety of capabilities and gear that is around, different bands will be focused on in different time slots:

10:00 to 10:30 for 1296 MHz

10:30 to 11:00 for 1296 and 2403 MHz

11:00 onwards for the higher bands, 3.4, 5.7, and 10.3 GHz.

Locations will be several in greater Brisbane as well as spread around South-East Queensland from Toowoomba to Stradbroke Island and from the Gold Coast Hinterland to the Sunshine Coast and possibly Hervey Bay. The following stations in greater Brisbane are known to be planning on in being active on the day:

VK4WA at Redbank Plains on 2.4, 5.7 and 10.3 GHz
VK4ZDX at Mt Gravatt on 1.3, 2.4, and 10.3 GHz
VK4NE and VK4CRO at Mt Gravatt on 1.3 and 10.3 GHz
VK4EA at Northgate possibly on 5.7 and 10.3 GHz
VK4DC at Bridgeman Downs on 10.3 GHz
VK4IIO at Clear Mountain on 10.3 GHz
VK4UH at Yugar on 10.3 GHz

Outside of Brisbane, the following operations are known to be planned:

VK4ZQ at Binna Burra on 1.3, 2.4, 3.4, 5.7 and 10.3 GHz
VK4JMC at Laidley on 1.3 and 2.4 GHz
VK4TJ at Toowoomba on 1.3 and 2.4 GHz
VK4GHZ near Tenterfield, NSW on 2.4 GHz (Preferred liaison on Ipswich repeater 146.9 MHz)
VK4OE at Stradbroke Island on 1.3, 2.4, 3.4, 5.7 and 10.3 GHz
VK4ALH on Sunshine Coast on 1.3 GHz
VK4NL on Sunshine Coast on 1.3 GHz
VK4RY on Sunshine Coast on 1.3 GHz
VK4BG at Hervey Bay on 2.4 GHz

Here's hoping for good weather and good propagation conditions and, most of all, great contacts!

Best 73 all round,

--Doug, VK4OE.

The day "happened" and it was a learning curve for many. The great advantage was that there is still about a month to get the problems sorted out before the real event : the 2011 Spring VHF/UHF Field Day.

Not all of the callsigns listed above were heard - but most of them were - including mine, VK4ADC, as a late addition, and I am not sure how many from around the Sunshine Coast were actually active. Also, Ron VK4KLC reported hearing most of the stations active around Brisbane on 1296.150 but currently has no transmit capabilities on this band.

Doug, VK4OE portable on Stradbroke Island, MC'd the session. The happenings were coordinated on 144.150 SSB plus Brisbane VHF Group's 147.000 FM repeater and contacts were made on almost all relevant bands by the various stations involved. As more details are revealed by participants, additional info will be added below.

From my point of view, I worked a couple of new callsigns on 1296.150 from a portable spot only about 600 metres away from my home QTH but one that provided a little clearer take-off in a number of directions. My plans to test the newly-put-together 2.4 and 3.4 GHz gear came unstuck due to a "labelling error" - made about 11.30PM the night before, in my haste to get it going for the outing.

The BNC sockets for the IF and the 10 MHz synthesiser reference signals had reversed labels on the outside of the ABS box and by the time I went looking for the reason that it wasn't receiving signals on those bands, the 12V batteries I was running the portable gear off were well down in voltage. Unfortunately, I hadn't taken a petrol-style DC generator to top up the batteries so I pulled down the station without actually achieving a contact on those two new bands.

Something else that requires attention before the Spring Field Day is to set up an alternative IF for 2.4 and 3.4, maybe the 146 segment instead of the 145 segment, so that while I am still using the TR751A on 145.150 for the 1296 IF, I don't have to quickly find the alternate transceiver's volume control when I start to transmit on the other band ! As it stands, 145.150 is used on two transceivers as the common frequency for 1296.150 plus 2403.150 plus 3400.150 !!

I did take a few photos of my gear at the time though and these have been included below.

Mouse-over for larger views....



Internal view of the VK4ADC 2.4/3.4 transverter box.

The 2.4 W1GHZ-series board is the upper one, the 3.4 equivalent is the lower.

The PCB mounted vertical at extreme lower left is a quick-and-dirty sequencer using OMRON DIL relays.

The common frequency synthesiser unit is mounted on the bottom of the box and has two SMA sockets at alternate ends that feeds across to the relevant LO ports on the W1GHZ boards.

A pair of SMA-style latching coax relays are mounted back-to-back at the centre right, with 0.141 cable to the 2 SMA antenna sockets.

The DIN sockets at left provide the connections for control and DC power.

The space on either side of the coax relays will be filled with transmit power amps in due course.



Slightly better view of the two back-to-back coax relays.

While not obvious in the photo at left, the transverters are "plugged in" via a harness rather than soldered in. This is to make the boards easier to remove for repair, tuning or modification.

The relays and LEDs also plug in via 0.1" headers to the sequencer board, as do the dual 8 volt 3-terminal regulators.

That seems to mean that there are lots of wires used in the box - and there are - but it will make it easier to service in the future.

The larger diameter red/black wire pair tied back to the 2.4 receive feed is the higher current power feed for the PA's yet to be installed.



This is how the box is used in practice. The coax and multiwire cables to the DIN plugs enter at the bottom of the box, which is mounted on the masting tube below the gridpack antenna.



The box is mounted to the mast with a single U-clamp and wingnuts. The two SMA feeds from the dual band coffee-can feed enter through the grid's mesh and screw onto the protruding SMA sockets. The yellow band on the coax indicates 3.4 while the white one indicates 2.4 GHz.



The front view of the coaxial feeds as they attach to the coffee can feed. They have been fed through heatshrink to provide some rigidity against each other when in use. The 23cm / 1296 yagi can be seen to the RHS the gridpack in this photo.



As installed for the outing 23 October 2011. The 1296 yagi is mounted above the gridpack and the axis directions aligned by sight before being erected. A dual band 2m/70cm whip is also mounted via a stand-off arm up above the gridpack.



The equipment setup for the day :

- Top : 1296 transverter mounted atop of the old Kenwood TR751A 2m IF.
- Centre : The IC-706Mk2G used for liason on 144.150 SSB and 147.000 FM.
- Bottom : The early IC-706 used as an IF for the 2.4/3.4 GHz transverter unit.

The small toggle switch just visible at the bottom RHS of the old 706 changes the transverter box over from 2.4 to 3.4 GHz.



The overall installation.

Yes, that is an old tennis court that the car was parked on and was used for the setup point. The property' s buildings have been partially demolished and the whole area is awaiting re-development as a new housing estate !

