

2012 SEQ Microwave Test/TuneUp Day

16 September 2012

The Brisbane VHF Group again organised a tuneup day to help microwave enthusiasts get their gear running. This time around, the event was hosted at the Redcliffe Radio Club rooms. Additional organisational and feedback details are available on the VKLogger forum website at this link (<http://www.vklogger.com/forum/viewtopic.php?f=31&t=10809>).

Thanks to Doug VK4OE, Rob VK4ZDX, Quentin VK4AQF and Peter VK4EA, there was a varied range of test gear on site to test antenna impedances, oscillators, receivers and transmitters at frequencies up to 24 GHz. I did not keep a list of those attending but some will be recognisable in the photos below. Adam VK4GHZ took lots of photos plus video so some of those will eventually appear directly on the VKLogger site (link above). The event was also transmitted live on digital ATV.

My day's aim was to find out some return loss details (so effectively SWR) on a couple of homebrew dual-band microwave feeds for 5.7 and 10GHz, as well as confirming the same details for the homebrew horns for the same bands. My 10GHz horn was great and exhibited a return loss greater than 20dB, the 5.7GHz one was poorer with a return loss around 12dB - but this one has not been optimised. The dual band feeds will require more work as the 10GHz section provided maximum return loss at 9.8GHz on both units (instead of around 10.4), and around 6.2GHz in lieu of 5.7GHz. The basic return loss in the amateur bands was only around 4-6dB - not good. I came away with good ideas on how to improve these devices so that will be the next step.

I also had an opportunity to check the harmonic levels from my little diecast-box-based 1152.000 MHz synthesised signal source at 5760 and 10386. The fundamental at 1152 measured at +12dBm, the 5th harmonic at -42dBm and the 9th harmonic at 10368 is at -52dBm. By knowing these amplitudes, I can now use external inline SMA attenuators to get a sense of receiver sensitivities on these bands once I have the receivers finished.

The event was also an opportunity to catch up on some face-to-face time with some of the guys we usually only recognise by callsign and voice over the radio, often only during field days. I haven't captioned the photos below, as I can't be absolutely sure of a few of the names. There were a number of people present who do not appear in any of the photos.....

Mouse-over the image to see in more detail....



