
VHF/UHF – An Expanding World

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Weak Signal

Well Spring is here and the mind turns to ... Field Days of course (what were you thinking?). The first, and usually best attended, of the VHF/UHF field days is the Spring VHF/UHF Field Day over the weekend of November 1 & 2 this year. Last year, according to the logs submitted by participating stations, a large contingent of VK3 stations participated, but very few from the other states. For example, on 2 m, 76 different VK3 stations were logged, whereas only 15 VK5, 9 VK2, 8 VK4, 6 VK7 and 2 VK1 stations participated. On 23 cm, there were 20 VK3 stations, 2 from VK7 but none from any other states. No VK6 stations were logged on any bands. So, let's get some activity going. Dust off that portable setup, find yourself a mountaintop and plan to be out, at least on the Saturday afternoon. Tell everyone where you plan to be via the VK-VHF mail list both to avoid unplanned multi-op siting and to encourage others to participate. You're sure to find other stations to work.

Those who have home-brewed VHF/UHF gear and even those who have delved into the innards of commercial VHF/UHF gear have no doubt come across the Mitsubishi series of RF Power Modules (e.g. M57762). These provide an easy and convenient, although not so cheap, means of obtaining power on 2 m, 70 cm and 23 cm. Unfortunately, Mitsubishi has announced that production of all of these modules will be wound down to zero by March of next year. However, all is not lost. They will be replaced by the RA series of modules fabricated using MOSFET technology. The packaging will be much the same but higher gains and better efficiency will be obtained. No idea on pricing at this stage however. So, if you are contemplating a project using one of the Mitsubishi modules, have a look at the RA series.

Digital Modes

Rex Moncur – VK7MO

Guy VK2KU introduced an improved procedure for terrestrial JT44 at Gippstech and this is now recommended for use in VK-ZL. The example below is for a sked between VK2KU and VK3XYZ. For more complete information on the procedures go to the NSW VHF DX Group web site at www.vhfdx.oz-hams.org then to Digital Modes and to JT44 operating procedures

Message Sent	Station Transmitting
VK2KUVK3XYZVK2KUVK3XYZ	VK3XYZ
VK3XYZVK2KU 1919191919	VK2KU
RRRRRRRRRRR 2020202020	VK3XYZ
RRRRRRRRRRRRRRRRRRRRRRRR	VK2KU
737373737373737373737373	VK2XYZ

The reports in the format 19 or 20 above represent the signal level in dB below the noise with the minus sign omitted. Thus 19 indicates -19 dB in a 2.5 kHz bandwidth which is indicated on the WSJT program when using JT44.

The procedure allows one to take best advantage of the multiple averaging techniques built into JT44. In the first line both callsigns are repeated in full and one can average these by pressing the "Fold" button to give an extra 1.5 dB improvement. In the second line the callsigns are in the exact same position as when starting the contact so the call sign average in the bottom JT44 window can build up giving a 1.5 dB improvement for each doubling of the averaging time eg 3 dB after four cycles. The report in the second line is averaged in the double letter average to the right in JT44 giving around a 3 dB improvement and the RRR in the third line is averaged in the single letter average to the right in JT44 giving around 7 dB improvement.

Only send a report when you have received both call signs correctly. This tells the other station that you have both callsigns so the other station can move to line 3 as soon as they have both call signs. Only send RRRRR when you have received both call signs and a report correctly.

In this example it is possible to send both call signs twice in the first line and gain the averaging advantage of 1.5 dB in a single line. In cases where both stations have three letter callsigns it is not possible to include both in full and one cannot gain this advantage. In the case of two three letter calls the first line is as follows:

VK2ABC VK3XYZ VK3XYZ

2 m & 70 cm FM DX

Not a great deal of activity for FM DX through August with a few smaller openings and one good duct opening in the South East, plus a good opening along the VK4 coast.

On the evening of Friday 1st, confined enhancement was noted from here to the Grampians devices, Otways and Geelong area. Otways VK3ROW noted at S9 (486 km), Grampians 70cm VK3RWU noted at S9+10dB at 471km.

The following evening David VK2AYO in Dubbo was noted working into the 146.950 repeater in Canberra speaking with VK2ZSZ, a distance of 341 km.

On the 3rd, enhancement still noted around central VK2 and northern VK3.

On the morning of the 13th of August, a duct was workable along parts of the VK4 coastal area. Felix VK4FUQ in Ingham, 100 Km North of Townsville, was able to work into the Gladstone repeater at Amy's Peak on 146.900 VK4RGA. Distance involved for Felix is 805 Km, Felix was in contact with Gary VK4TGB in Bundaberg and also Alan VK4EAB in Gympie, 150 Km and 270 Km respectively to the device. Felix was also accessing another unusual repeater on 146.950 but could not get any I.D morse from it. I would think it could have been the device at Blackwater VK4RBD.

Very early morning on the 16th of August, a duct extended across to VK5 from southern VK2 and VK3 call areas. This appeared to hang in there all day and was gone some time after the sun went down in the evening. Many of the more easily accessible 2 m repeaters were workable from the east, including the likes of Murray Bridge, Lobethal, Crafers and Port Augusta.

VK3KYF, Garry in Mildura had an interesting day, not only working into VK2KRR near Wagga simplex, but also making the Wagga 2m repeater, Murray Bridge in VK5 and also Mt. Macedon in VK3. Some good distances there from Garry and around

480 km into Wagga. Terry VK3TCM again in Mildura was also working into Mt. Macedon, as was Brian VK5ZMB, a good signal from Gawler S.A. Barry VK5KBJ south of Adelaide was able to work simplex into VK2KRR on 2 m, a distance of 701 Km with a 5/4 signal.

Thomas VK3HFZ was noted as working portable from the snow on Mt. Buller, providing contacts for those who were in range. Thomas was a 5/6 signal here near Wagga.

Finally, the Mt. Baw Baw repeater VK3RWG was brought back to life on the 9th of August and is putting out a good signal on 147.225.

The new repeater servicing the Echuca area, VK3RCA, is up and running on 146.675. Although running a borrowed mobile whip on transmit due to antenna problems, the device is still getting out OK and a new antenna is on the way. Well done to VK3JGL and VK3EME for the work on the project.