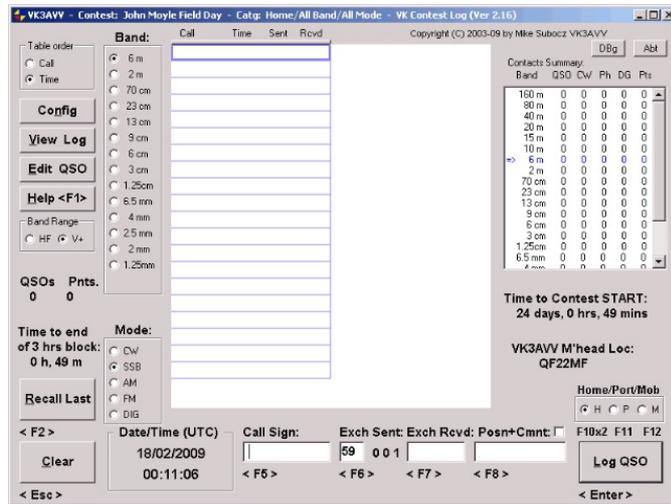




**Using VKCL Software with multiple Icom Transceivers on a common CIV bus.**

{ Utilising OmniRig software from DxAtlas (<http://www.dxatlas.com/OmniRig/>)

& VSPE from Eterlogic (<http://www.eterlogic.com>) }



(<http://web.aanet.com.au/%7Emnds/>)

I started using the VKCL contest logging software (<http://web.aanet.com.au/%7Emnds/>) back in January 2009 with for the event of the 2009 Summer Field Day (report elsewhere on this web site) and have to admit that initially I wasn't particularly impressed. It works somewhat differently to other logging programs around and it wasn't really until I used it again for the 2009 John Moyle Field Day in March that I really came to grips with it.

Mike VK3AVV, the author of VKCL, has been responding to my emailed submissions about various issues and ideas that have arisen and is taking care of the business end of things : re-writing code and solving issues. Me, I am just a user for this package and have been providing feedback to Mike ... some good & some bad.

Now I am in the situation that I have 2 (actually 3!) Icom rigs that I would like to use in Field Days or other contests so that I can operate almost simultaneously on different bands. Being a single operator type, I can only hold one microphone at a time so can't work them truly simultaneously. The Omnirig interface software (<http://www.dxatlas.com/OmniRig/>) ( by Alex Shovkoplyas, VE3NEA ) allows two different radios to be used and the frequency and mode details are then available in VKCL. Simply pushing a Windows "radio button" in VKCL changes the software from gathering frequency and mode data from one radio to another and then that is used for logging the contest QSOs. In some ways, it would have been nice for Omnirig to be able to talk to more radios on 'different ports' because that would have meant additional bands could be logged more easily. I guess beggars can't be too choosy...

Omnirig is effectively a "Windows Messaging System" to "intelligent serial port adapter" and applications like VKCL use the inherent message formats available in all versions of MS Windows to pass data between Omnirig and the application/s (more than one application can communicate with Omnirig at any one time). Omnirig goes further than that in that it also encodes the request and replies into model-specific enquiries sent to the configured serial port. For example, if Rig1 is set as an Icom model on COM3:, Omnirig will send a data stream formatted for the Icom CIV out and listen for a reply in the same format. If Rig2 is set as a Yaesu model that supports CAT, on (for example) COM2:, the data that is sent through that configured serial port is a far simpler set of data requests and replies. From the data, Omnirig extracts the main information required and sends it back in a common format to the application via Windows Messages. Simple in theory, complex in practice.

Just a little warning is probably relevant at this point : If your Windows system is "sluggish" with too many background applications running then the Windows Messaging System will be sluggish too - and that means that applications like VKCL will have delayed information available. If VKCL does not update in a timely manner then start shutting down unnecessary tasks. A good Windows startup software management tool is Microsoft's MSCONFIG.EXE (available here as a ZIP file, 67KB) since you do not have to directly change anything in the Windows Registry. Take out the quick start-up items like Quicktime, Acrobat Assistant, Acrobat Reader, MS Office Startup.... by de-selecting them via the check boxes on the Startup tab and then re-starting Windows.

*Note added 22 June 2009 :*

I purchased an unlocked USB wireless modem card early in the week before the 2009 Field Day and bought a \$10 pre-paid Virgin mobile broadband starter kit (which included 300MB for the 1st month). I set up the software on the notebook and had it operating at 3.6MB/s at home, set up shortcuts to VKLogger and thought I would be able to watch activity and do an occasional post from my field day site. It did work - finally - but there are some things for others to note to avoid the same issue that I encountered. { Note : I only intend to use the wireless mobile account for specific occasions such as field days or travelling holidays and will not be using it each and every month - so the fact that all "unused" time expires monthly is part of the concept. If I can get remote access on a FD for a \$15 fee, that is far less than my typical fuel cost ! } [ Post note : Broadband speeds from Virgin use the Optus system which uses the Optus Dual Band (2100MHz/900MHz) Network. In reduced coverage areas, the wireless modem system falls back to the Optus GSM/GPRS Network ]

Firstly, if you are using VKCL software with OmniRig and a serial port, you may find that you cannot access the USB 3G modem port (in my case, which appeared as COM7: ) - Access Denied. I encountered the same effect when I wanted to run my GridLocWM software - the software came up with an error 5 message - where it worked previously to my starting OmniRig.

It appears to me that with OmniRig running, spare COM ports are sometimes "gobbled" up. *The fixis* to stop OmniRig using the button on the VKCL Config screen then minimise VKCL, run the broadband dashboard / control panel software and connect to the wireless broadband ISP, and in my case, start GridLocWM which uses a USB to serial port adapter (as COM6:), before returning to the VKCL screen and starting OmniRig again. The wireless broadband connection still works, as does GridLocWM, and so does the communications between VKCL and, in this case, the Icom CIV device. If you have a software crash and have to make it all work again, use this same process each time.

The other issue was that the only "broadband" connection I could get was at 53KB/s via a GPRS connection instead of the 3.6MB/s I had at home. It still worked, I was still able to watch VKLogger and still "posted" as well - but things were a little slow. I guess if we go to our "remote" locations, we have to accept slow internet access..

( original text as extracted from 2009 Winter VHF/UHF Field Day report )

Continuing.....

For those of you who are unaware of the Icom CIV details, each Icom transceiver & receiver model after about 1984 (+/-) has a bi-directional serial control (CIV) port built in and utilises an asynchronous packet-style burst of data along a single wire (with respect to common ground) at TTL voltage levels ( 0 to +5 volts ), varying baud rates (300- 115200), 8 bits, 1 stop bit, no parity. The only real difference in the software for any model is the device CIV address and the enhanced features available in that particular device. By selecting a different address value in our 'packet' sent on the CIV bus, a different Icom model can respond to the software request. As such, multiple Icoms can be connected "in parallel" across a single serial port (RS232) to TTL adapter ( A.K.A. a CIV interface) and only one will respond to any given software request - the one with the matching address code. This is considerably different of the likes of the Yaesu CAT system where each Yaesu device HAS to be connected to a different RS232 serial port - there is no packet data format involved, any addressing etc..

Samples of standard CIV addresses : (model code, address in hex, year released)

IC-746 \$56 1998

IC-706MkII-G \$58 1998

IC-R75 \$5A 1999

IC-756Pro \$5C 2000

IC-718 \$5E 2001

IC-756ProII \$64 2001

IC-746Pro/IC-7400 \$66 2001

{ info from <http://www.plicht.de/ekki/civ/civ-p31.html> (<http://www.plicht.de/ekki/civ/civ-p31.html>) }

Effectively by changing the address inserted in the CIV interrogation data packet from \$5E to \$66, we can obtain details like Frequency, Emission Mode , etc, etc.. via the CIV data bus from an IC-7400 instead of an IC-718.

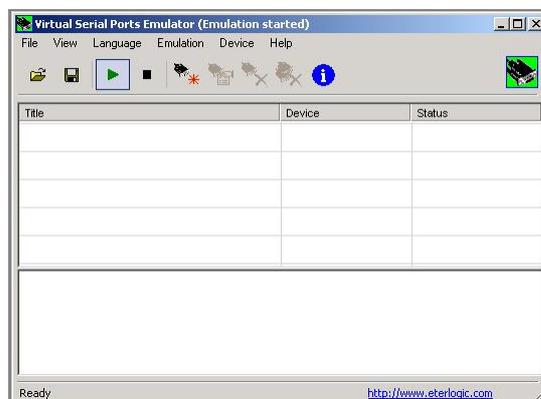
I have been experimenting here with VKCL V2.16 (current release at this time) and found that the only way I can get the second Icom rig (IC-718) to work in VKCL via Omnirig (with an IC-7400 as primary) with a single CIV interface is to run a Virtual Serial Port Emulator (VSPE) - available for 32 bit Windows free from [www.eterlogic.com](http://www.eterlogic.com) (<http://www.eterlogic.com>) - and set up as a splitter so that my physical COM3: becomes COM6: etc. The Omnirig software then has both Rig1 and Rig2 ports set to COM6: ( and thus use the same physical CIV interface device ), both transceiver CIV ports effectively plugged in parallel. Bit of a bugger if I want to run my IC-706 as well !

I tried the N8VB vCOM Virtual Serial Ports (<http://www.philcovington.com/SDR/Downloads/>) Driver first and found that without any reasonable public documentation on how to set it up, it was effectively a failure. There wasn't even a Help menu to provide guidance.

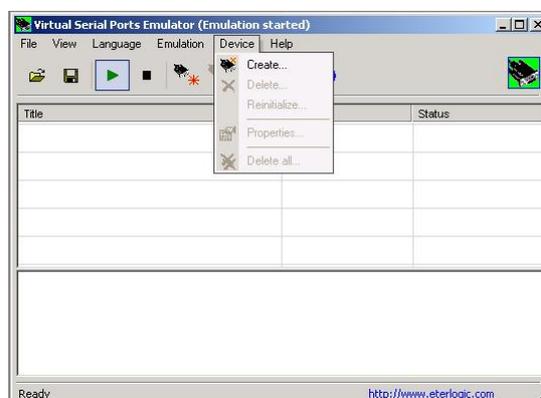
In my mind, it has to be simple to set up and the Eterlogic VSPE is certainly simple - Create a Device, set the physical source port, what port you want it to appear as, and Finish... I have Saved the config so only have to Load it any other time I need to. By default it remembers the configured settings. Use the Minimise button at top RH corner and the VSPE will stay in the System Tray. You can also set it to give COM to TCP ports etc.. so a lot more flexible than the N8VB code.

The setup order is ..

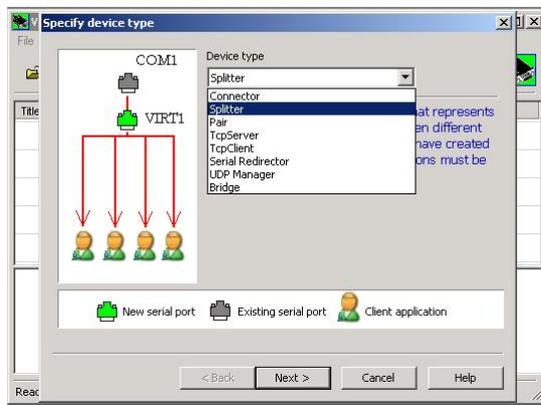
(Mouse over images for a larger view)



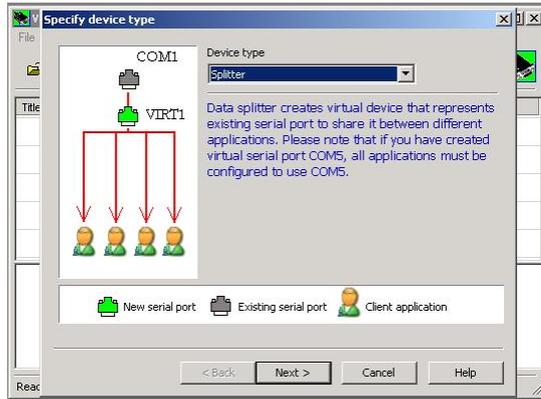
VSPE initial screen - first time around, no ports



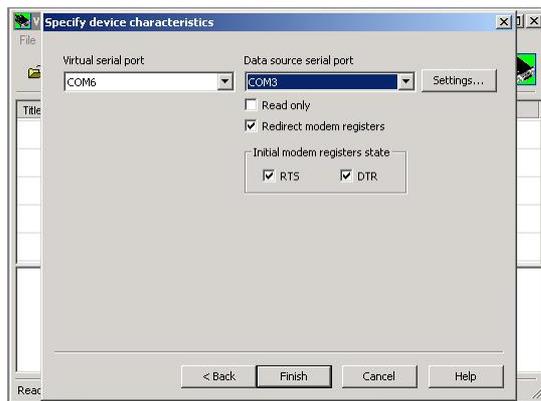
use Device menu, select Create



From the drop-down list, select Splitter

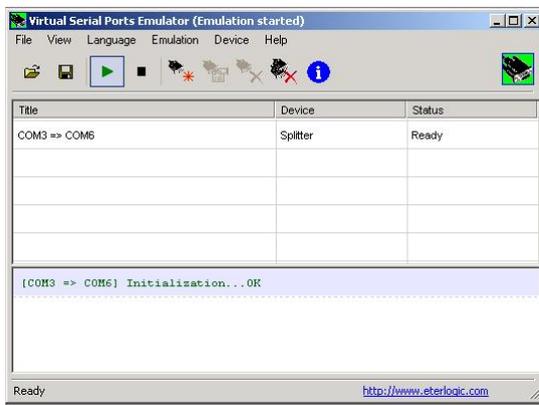


This screen tells you what a Splitter can do... Next..



I selected COM6: as it was not a physical port on the PC. My actual ports are COM1 to COM4 with COM3: being the one connected to the CIV interface. Your setup will undoubtedly be a different port number and could be something higher if using USB/serial adapter. Just make sure the virtual port is free on the PC. Press Finish.. all done.

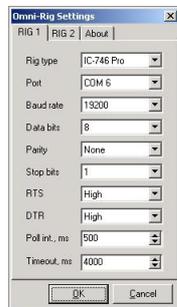
Extra note - if your Icom radio's CIV settings are NOT 19200 baud, then go into the advanced properties button at RHS top of this screen and adjust the baud rate to suit.



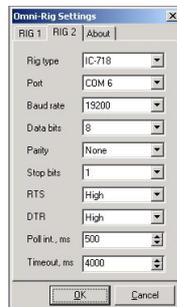
The VSPE is up and running, redirecting COM3: and making it available as COM6: to multiple software packages and without that dreaded "port already in use" message.

Press the Minimize button at top RHS and VSPE will drop back to the Windows System Tray.

- (1) launch the VSPE software & get virtual port running (as per above step-by-step)
- (2) start VKCL and go to config screen, use settings and start Omnirig. Set both Rig1 & Rig2 to the same virtual port (eg COM6:) and then Save Config.

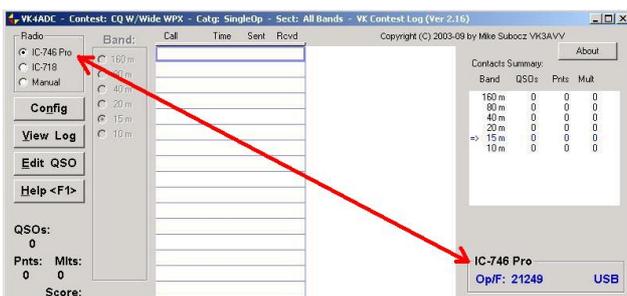


OmniRig : This is the Rig1 setting - note that the radio is the IC-746Pro and the port is set to COM6:

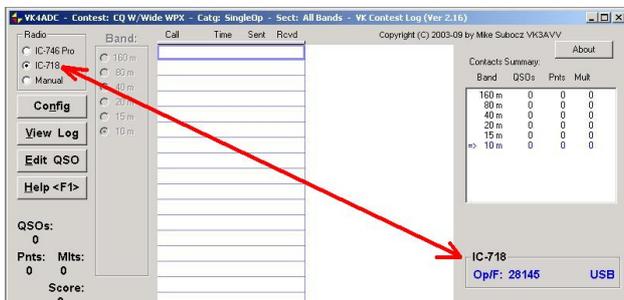


This is the Rig2 setting for the IC-718 - note that the port is also set to COM6:

Voila, both radios appear in VKCL & using the radio buttons against the models causes the displayed freq/mode to change over.



The "Radio" button is at top LHS and the model and current frequency/mode info is bottom RHS on this image cut. Note that Omnirig thinks it is a IC-746Pro - which it would be if it was marketed in the Americas - but since the model code is IC-7400 for the rest of the world, we just have to ignore it... unless we want to make a new Omnirig model code file....



A few seconds later, after pushing the radio button to the IC-718 position, the model code and frequency at the bottom RHS of this image has updated...

In VKCL, both Icom radio models + Manual mode appear with this configuration where with just Omnirig running (but with both radios set to the same COM port), only Rig1 appears. Obviously Omnirig doesn't care for the same COM port to be used again.

Using the VSPE, I can also access both radios via Ham Radio Deluxe ('Connect'-ing one at a time to the VSPE port - COM6:) at the same time as VKCL and without an error message appearing ! The operation to VKCL is then sluggish but will slowly update - obviously HRD is over-polling the CIV bus - as noted in other web-related articles...

This info might eventually be found on the VKCL web page - with a direct download link to Eterlogic's VSPE (<http://www.eterlogic.com/downloads/SetupVSPE.zip>) - for those who have a couple of Icom rigs available and want to use one straight (eg IC-7400 for HF/ 6 / 2) and another (eg IC-718) to drive a UHF/+++ transverter - or even those who have a couple of Icom HF rigs and dart from one to the other on different HF bands. I am thinking about using my old IC-706 to drive a 23cm transverter ( and maybe higher frequency version transverters in due course) from 2m SSB so that becomes another rig to need to access for field days/contests. I have communicated the need for transverter frequency offset support for VHF/UHF/SHF etc to Mike and he is at least considering incorporating it in a future release of VKCL...

With COM ports on PCs now a scarce commodity ( and some USB/COM adapters 'touchy' to use), this VSPE support feature may a sufficient enhancement to encourage more people to use VKCL in contests.

One thing that you might encounter when using VKCL with OmniRig support is the following screen when shutting down VKCL (does not occur if NOT using OmniRig) :



According to Mike VK3AVV, this is related to how OmniRig interfaces with VKCL and will hopefully be solved in a future release of VKCL.