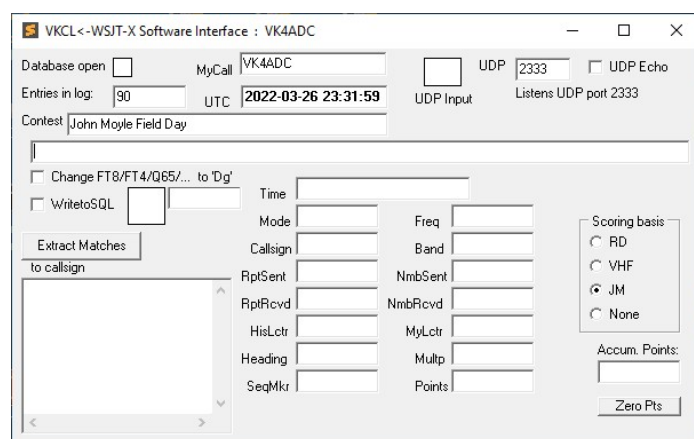


## Dig\_Link : Using WSJT-X for logging Digital Mode contests into either VKCL or Dig\_Log software

There is no direct implementation for VKCL to accept data from WSJT-X, although contact details can be done manually. Specially coded software can provide an automatic interface between the two packages, parsing the data sent out by WSJT-X and added directly to the VKCL database for subsequent totaling and creation of a log file to submit. It scores QSOs according to the current rules for the RD, JMMFD and VHF/UHF Field day rules, but since digital QSOs have already occurred before the logging action is taken, in these cases contacts that fail based on time or band rules simply have contact points set to zero in the log details.



( Please note that any images presented in this document are representative only and may not represent the layouts of the currently-available versions )

There are only a few steps required in the various' packages configuration before contacts can be logged automatically, and the guide supplied below should be used to ensure correct setup.

*The following is critical use information :* Use either VKCL or Dig\_Log to create the correct contest definition – once done, neither of these are absolutely necessary to participate in the event – afterwards, yes.. Start WSJT-X or Dig\_Log on this Dig\_Link software interface in any order, not critical. If a compatible VKCL database is not present the Dig\_Link interface software will exit without anything other than a warning message box. You have been warned !!

Second warning : Using VPN software can upset the UDP data communications and Dig\_Link will not receive any data from WSJT-X software. **Turn OFF VPN software.**

The Dig\_Link software is available for download in a SETUP.EXE format only from the VK4ADC web site and should be updated shortly before the contest activity to ensure the latest version is used.

Note the software is FREE.

Setups using VKCL, Dig\_Link and Dig\_Log are all covered in this document.

I realise that in due course there will be other contest logging software packages that will incorporate this support directly – but it isn't in there yet.

Doug VK4ADC



## VKCL : New Contest setup :

1. Start VKCL { Note: option here – you can jump to the Dig\_Log software setup }
2. On the Contest Configuration screen, select Browse
3. Under the VKCL folder, select Contests then the current year
4. Select New Folder and name it appropriately, press OK
5. The new/current folder will appear near the Browse button
6. On the Contest Configuration screen, select Category
7. From the drop-down box, select from John Moyle Field Day, Spr/ Sum/ Win VHF/UHF or the Remembrance Day contest.  
{ other name contest options may be available in a later release }
8. Select database type as Mstr (ie Master)
9. Category as Home or Portable, as relevant
10. Operator Callsign as VK1XXX or VK1XXX/P , as relevant
11. Enter your 6 character Maidenhead Grid locator detail eg QF22HM
12. Enter the contest start date in YYYY-MM-DD format eg 2022-04-16
13. Press the Save Config button
14. Go back into the Contest Configuration screen, press the Backup button and then enter a fully qualified existing backup folder name – OR - use the Browse button to create a new folder detail. It is desirable that refers to a folder on a USB drive rather than the main HDD.
15. Set Backup Period as 5 minutes, Backup Type as Automatic, remove tick from the Bell checkbox. Press Save.
16. Back on the main screen, reduce the width of the normal 'Logging Window' then press the 'All Log' button and set the resulting window's position, height and width to fill the space created just previously.

To make the VKCL<-WSJT-X software record digital mode QSOs from WSJT-X, VKCL does not even have to be running once the VKCL database is created/configured. The contest database is accessed directly by this **Dig\_Link** interface software, and it is the user's choice, as well as available screen real estate, that determines whether it will be run throughout the contest itself.

At any time during or after the contest, the VKCL software can be started or exited without any abnormal effects on contacts details or final scores.

It should also be mentioned that the **Dig\_Link** interface software does not need to be seen on-screen, but must be left running even if minimized.

As WSJT-X data is intercepted and re-distributed, the new contacts will be shown in the 'All Log' window but sometimes the latest values are not displayed. Press the 'Clear' button or the ESC key on the keyboard in VKCL to update the screen details.

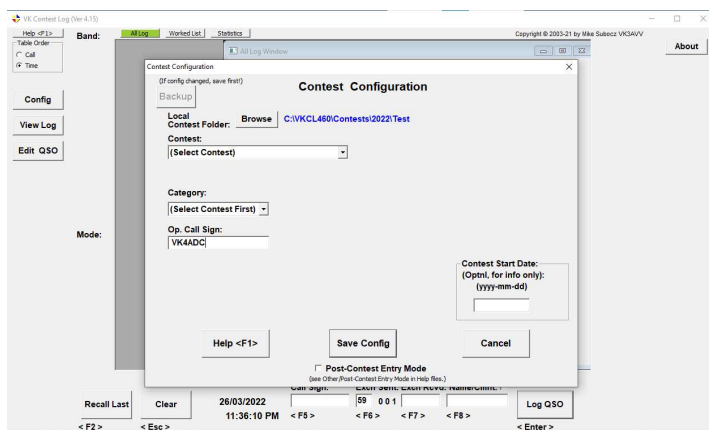
The QSO count and Points total at LHS may not update automatically but the following procedure will manually update these values.

{ VKCL does not appear to automatically update even with background database changes. }

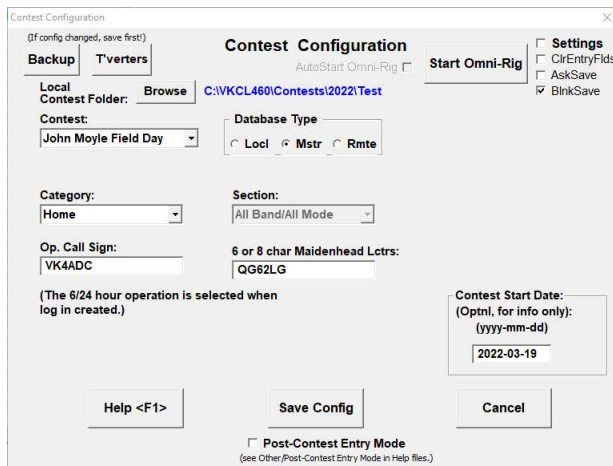
To generate/update scores :

1. Open VKCL
2. Contacts should show in the All Log display window
3. Select View Log
4. Select Export Text Log
5. Press cancel
6. Press Close
7. The QSO's and Points totals will have updated

The following screen grabs may assist in the software configuration :



Starting VKCL will immediately invoke the 'Contest Configuration' screen. 'Browse' to create a new folder and name it appropriately. In this example the folder 'Test' is made under c:\VKCL460\Contests\2022



Contest Configuration

(If config changed, save first!)

**Backup** | **Tverters** | **Contest Configuration** | **Settings**

Local Contest Folder:

Contest:  Database Type: ☐ Loc ☒ Mstr ☐ Rmte

Category:  Section:

Op. Call Sign:  6 or 8 char Maidenhead Lctrs:

(The 6/24 hour operation is selected when log in created.)

Contest Start Date: (Optnl, for info only): (yyyy-mm-dd)

☐ Post-Contest Entry Mode  
(see Other/Post-Contest Entry Mode in Help files.)

Then the contest type is selected. In this example, the JMMFD is used.

The database type is selected as Mstr (/Master) as against Local (/Local) to ensure that the database is not kept in a 'locked' state.

Select Home or Portable, as relevant.

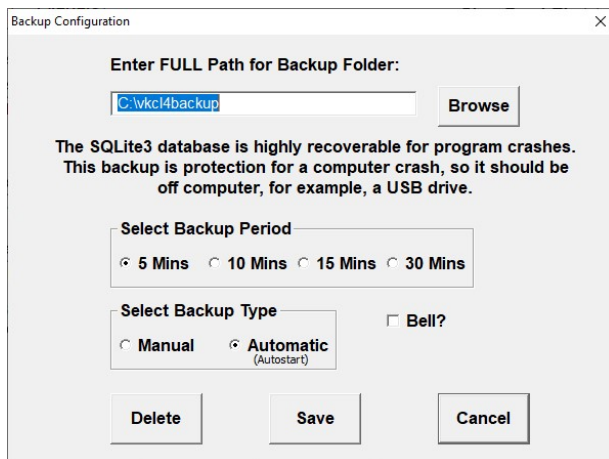
The 'Op Call Sign' is set to your call, adding /P as relevant.

Now insert the 'Maidenhead locator' detail as 6 characters, eg QG62LG in the example.

Note : a 4char grid will ensure that the interface software will not work – on purpose !!!

Finally, set the 'Contest Start date' in YYYY-MM-DD format eg 2022-03-19

Press the 'Save Config' button.



Backup Configuration

Enter FULL Path for Backup Folder:

The SQLite3 database is highly recoverable for program crashes.  
This backup is protection for a computer crash, so it should be off computer, for example, a USB drive.

Select Backup Period

☒ 5 Mins ☐ 10 Mins ☐ 15 Mins ☐ 30 Mins

Select Backup Type

☐ Manual ☒ Automatic (Autostart)

☐ Bell?

Re-enter the Config Contest screen , press the 'Backup' button.

Two choices here :

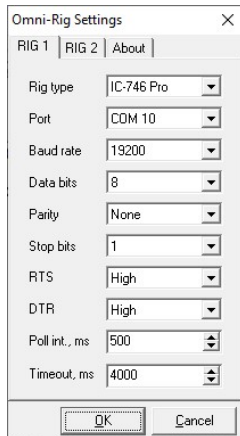
either enter a fully qualified folder name of a folder that ALREADY EXISTS

– or – use the Browse button and navigate to a suitable folder or use the New Folder option to create a new folder by name.

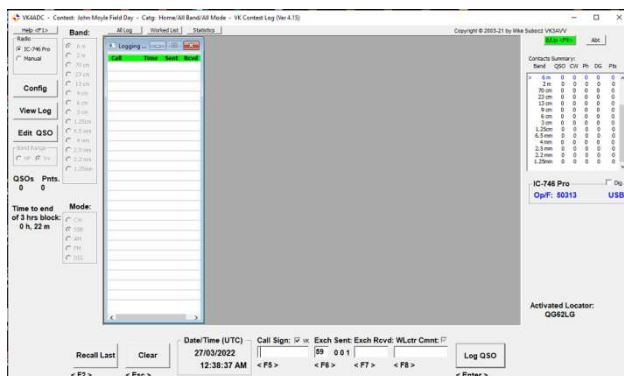
Set the 'select Backup Period' to 5 minutes, the Backup Type to Automatic. Untick the Bell tickbox.

Press the 'Save' button.

On the Contest Configuration screen, tick the 'Settings' tickbox, press the 'Start OmniRig' button. Something like the flowing should appear...

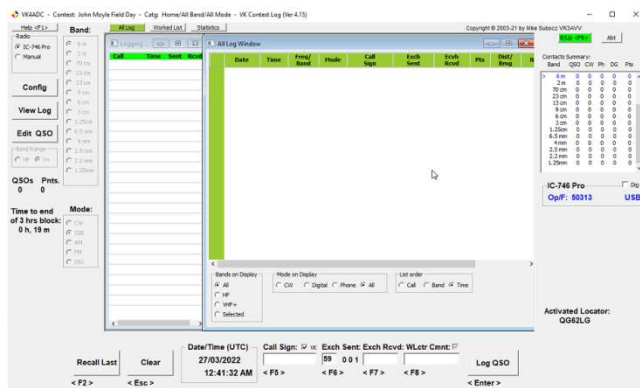


This is the normal setting I use in Omnirig, yours should be similar. Press 'OK' and Omnirig should communicate with the radio and the current rig frequency should display near RHS centre on the main VKCL screen.



Note the rig frequency at RHS centre.

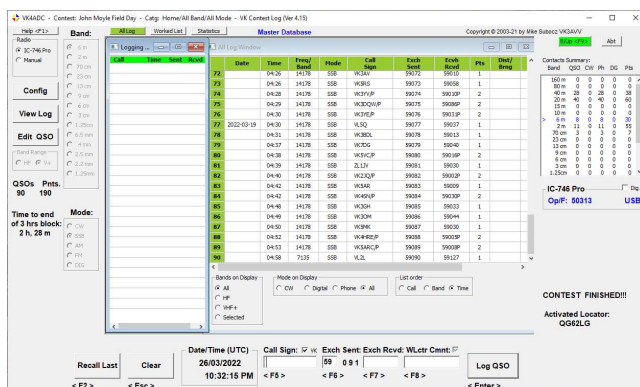
Resize/narrow the 'Logging Window' width by using the mouse on the RHS of that display box and dragging left.



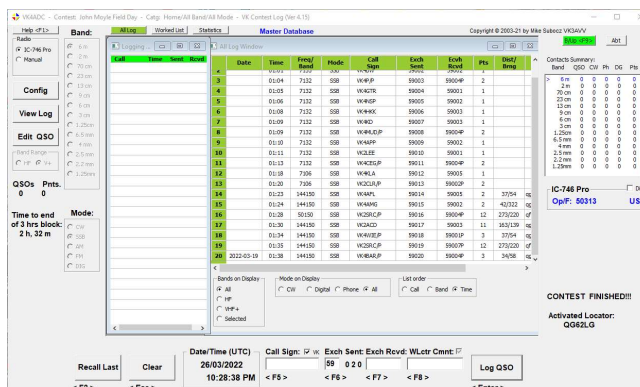
Press the 'ALL Log' button, re-size and position it as shown directly above.

VKCL is ready to interface to WSJT-X...

To jump now to when VKCL is getting data from WSJT-X :



Note there are no contacts showing the 'Logging Window', no QSO count or points totals, or in the band-by-band totals window. However there are details showing in the 'All Log' window. That can be resolved later.



In this example, from my 2022 JMMFD log, there were 90 log entries, but still no totals or counts.

	Date	Time	Freq/ Band	Mode	Call Sign	Nmbr Sent	Nmbr Rcvd	Pts	Dist /Brng	Pos/Cmnt
1	2022-03-19	01:01	7135	SSB	VK2LKR	59001	59001	1		
2		01:01	7135	SSB	VK4BW	59002	59002	1		
3		01:04	7132	SSB	VK4PJ	59003	59004P	2		
4		01:05	7132	SSB	VK4CTR	59004	59001	1		
5		01:06	7132	SSB	VK4GSP	59005	59002	1		
6		01:08	7132	SSB	VK4WK	59006	59003	1		
7		01:09	7132	SSB	VK4WD	59007	59003	1		
8		01:09	7132	SSB	VK4WUD/P	59008	59004P	2		
9		01:10	7132	SSB	VK4APP	59009	59002	1		
10		01:11	7132	SSB	VK2LEE	59010	59001	1		
11		01:13	7132	SSB	VK4CEG/P	59011	59004P	2		
12		01:18	7106	SSB	VK4QLA	59012	59005	1		
13		01:20	7106	SSB	VK2CLR/P	59013	59002P	2		
14		01:23	144150	SSB	VK4AFL	59014	59005	2	37/54	qg62om
15		01:24	144150	SSB	VK4AMG	59015	59002	2	42/322	qg62p
16		01:28	50150	SSB	VK2SRC/P	59016	59004P	12	273/220	qf69fu
17		01:30	144150	SSB	VK2ACD	59017	59003	11	163/139	qg60au
18		01:34	144150	SSB	VK4WIE/P	59018	59001P	3	37/54	qg62om
19	2022-03-19	01:35	144150	SSB	VK2SRC/P	59019	59007P	12	273/220	qf69fu

☐ CW
☐ Ph
☐ Dg
☒ All

☒ Time
☐ Band
☐ C/Sign

To update these values, we use the ‘View Log’ button to show something like the above. Now press the ‘Export Text Log’ button.

John Moyle Field Day Contest Log Output

Call Sign: VK4ADC

Name:

Address:

eMail:

Location (if portable):

Category - Home

☐ 24 Hrs
☒ 6 Hrs

Section:

00190 All Band/Phone

Press to exit without creat

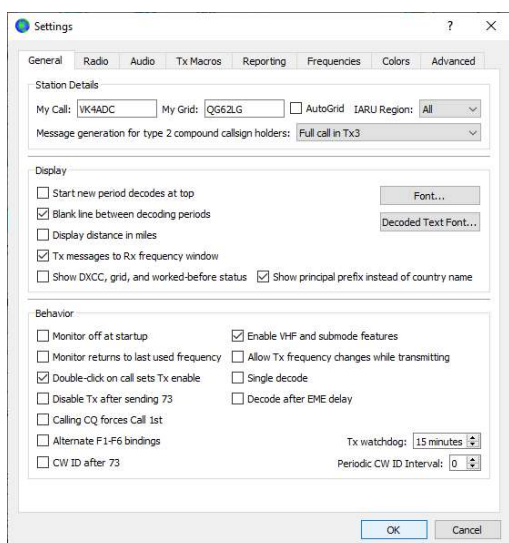
This screen is displayed but not that you need not press the ‘Create Log’ button but simply press the ‘Cancel’ button. On your return to the main screen, the QSO count, points total and band-by-band totals have now been updated.

Those with an eye for details will have seen that all of the QSOs in the log actually use SSB, but the interface software actually handles ALL emission modes and updates the VKCL log – however there is an option in **Dig\_Link** to convert any modes like FT8, FT4, Q65, FST4 to a ‘Dig’ mode identifier to make the VKCL software ‘happy’.

After the contest, open VKCL (if it is not already open) and follow the previous procedures to update the contest totals but then Create the export log. Review the log. All done.

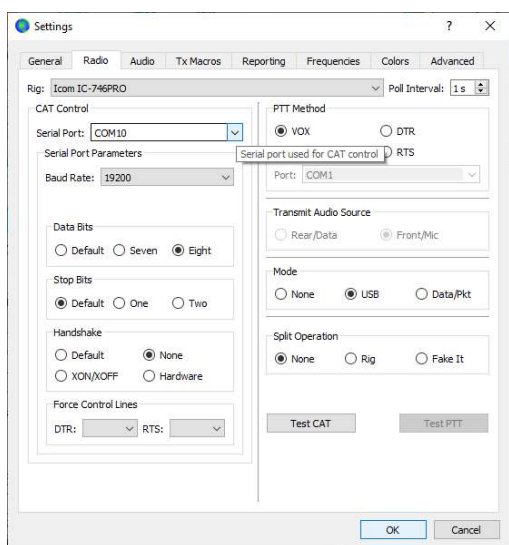


## Configuring WSJT-X :

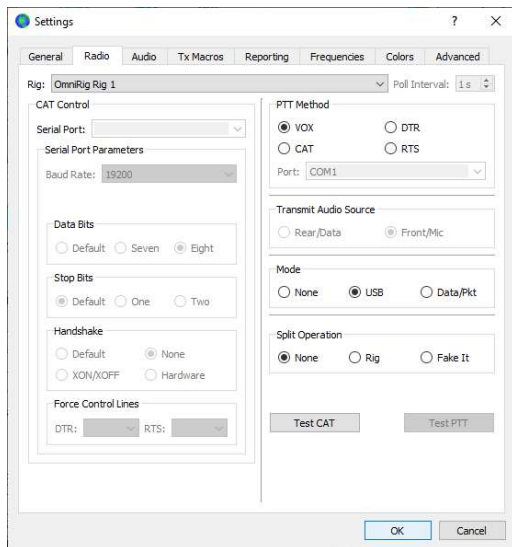


Start WSJT-X, then select the 'File' then 'Settings' from the top menu. Select the General tab. Ensure that the correct callsign is present, including a /P if operating portable. The 'My Grid' value must be a 6-character format value.

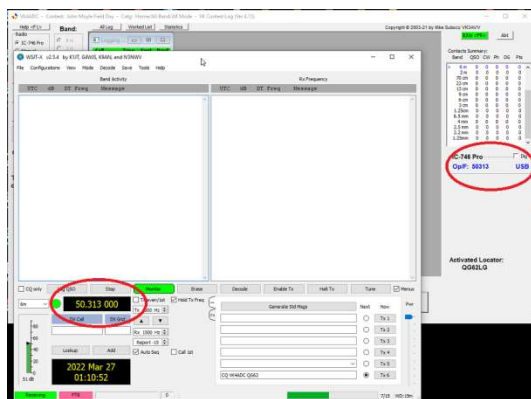
Note : A 4-character format normally exchanged is insufficient for contesting purposes.



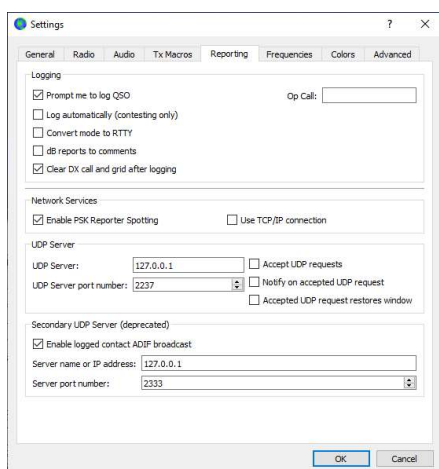
This is my normal WSJT-X radio settings but with these, both software packages can not simultaneously access the radio to check frequency and mode settings...



Setting the 'Rig' value to OmniRig Rig 1 from the dropdown box resolves the issue.

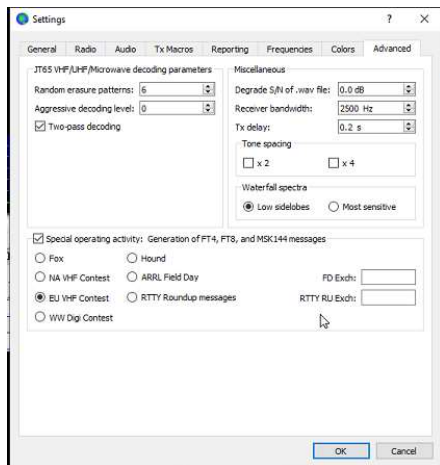


The frequency is displayed simultaneously on both packages – as denoted by the red ellipses...



The next tab to be visited is the 'Reporting' option. Ensure that the 'Secondary UDP server ' has a tick in the 'Enabled box', the 'IP address' is set as 127.0.0.1 and the 'Server Port Number' is 2333.

Next, select the 'Advanced' tab.



The 'Special Operating Activity' box needs to be ticked, and the 'EU VHF Contest' is then selected. Click 'OK'.

WSJT-X is now fully configured for being used with the **Dig\_Link** interface software.

Note that the only change to revert to 'normal' use is to reverse this last setting – untick the 'Special Operating Activity' box.

## Dig\_Link configuration :

The only settings that are not fully automatic are the UDP port value, the 'Change FT8/FT4/Q65/.. to Dig' checkbox BUT these values are save from one use to the next.

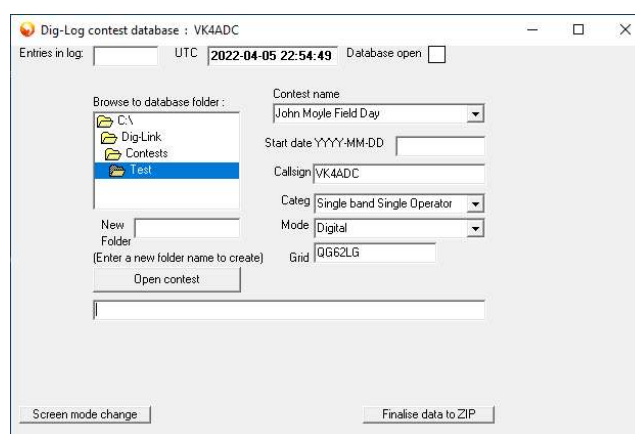
The normal UDP port value is set as 2333 to suit the value set for the secondary UDP value in WSJT-X 's 'Reporting' tab. If the secondary UDP value in WSJT-X is changed, alter this also to match.

The 'Change FT8/FT4/Q65/.. to Dig' checkbox state is set to convert any supported digital mode so that the emission mode value appears as 'Dig' so that VKCL accepts that as a standard mode value.

The cross-check data box will only have data appear if previous QSOs with the same callsign are found in the database, and it is against this data that valid QSOs are confirmed. For info only.

The 'Scoring Basis ' selection is automatic and is more an indicator than an active user control.

## The Dig\_Log software add-on.....



For those who do not – or cannot – run VKCL, there is an optional piece of software in the Dig\_Link package, named 'Dig\_Log'. Its function is to allow users to create empty databases, compatible with VKCL, but independently.

Once a database is created, Dig\_Link will quite happily work with that and feed the data processed from the data stream initiated by WSJT-X.. Again, as with VKCL, the Dig\_Log software does not have to be running all of the time. It can be started and stopped at any point once a database is in place. That makes the basic contesting/digital configuration just WSJT-X and Dig\_Link. Anything else is optional.

### How to make a database :

Start the Dig\_Log software, it is located in the same folder where you installed Dig\_Link.

A warning : you must complete **ALL** of the fields on screen first – the contest details, your callsign, even the start date, section details etc – BEFORE you press the 'Create database' button..

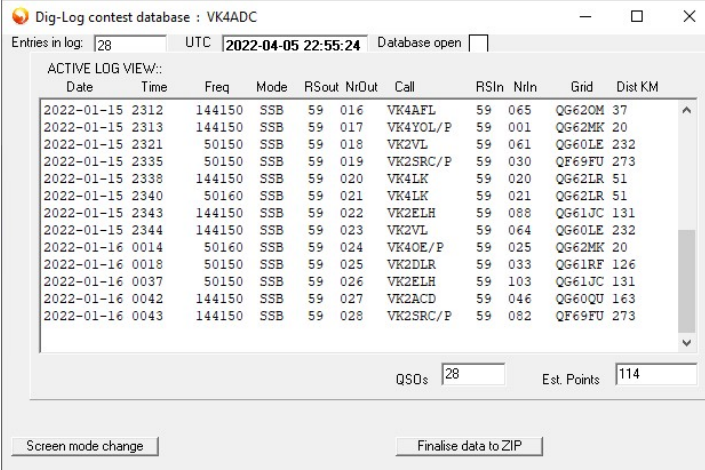
Get it wrong and you may need to close Dig\_Log , manually delete any newly-created database and start over !!

Once the other fields have been filled in, navigate through the folder structure on your disk drive, select a destination folder – there is an option now – or create a new folder under that destination folder by entering the desired name in the empty box below and then press the button marked 'Create contest database'. Not only will it create the folder name but will then create the new database in that folder. For VKCL compatibility, it is named 'VKCLLog.db3'.

If there is already a database in the selected folder (as displayed) then the button shows as 'Open contest' instead.

From that point, you can exit Dig\_Log if desired.

## Using Dig\_Log :



Dig-Log contest database : VK4ADC

Entries in log: 28 UTC 2022-04-05 22:55:24 Database open ☐

ACTIVE LOG VIEW::

Date	Time	Freq	Mode	RSout	NrOut	Call	RSIn	NrIn	Grid	Dist KM
2022-01-15	2312	144150	SSB	59	016	VK4AFL	59	065	QG62OM	37
2022-01-15	2313	144150	SSB	59	017	VK4YOL/P	59	001	QG62MK	20
2022-01-15	2321	50150	SSB	59	018	VK2VL	59	061	QG60LE	232
2022-01-15	2335	50150	SSB	59	019	VK2SRC/P	59	030	QF69FU	273
2022-01-15	2338	144150	SSB	59	020	VK4LK	59	020	QG62LR	51
2022-01-15	2340	50160	SSB	59	021	VK4LK	59	021	QG62LR	51
2022-01-15	2343	144150	SSB	59	022	VK2ELH	59	088	QG61JC	131
2022-01-15	2344	144150	SSB	59	023	VK2VL	59	064	QG60LE	232
2022-01-16	0014	50160	SSB	59	024	VK4OE/P	59	025	QG62MK	20
2022-01-16	0018	50150	SSB	59	025	VK2DLR	59	033	QG61RF	126
2022-01-16	0037	50150	SSB	59	026	VK2ELH	59	103	QG61JC	131
2022-01-16	0042	144150	SSB	59	027	VK2ACD	59	046	QG60QU	163
2022-01-16	0043	144150	SSB	59	028	VK2SRC/P	59	082	QF69FU	273

QSOs 28 Est. Points 114

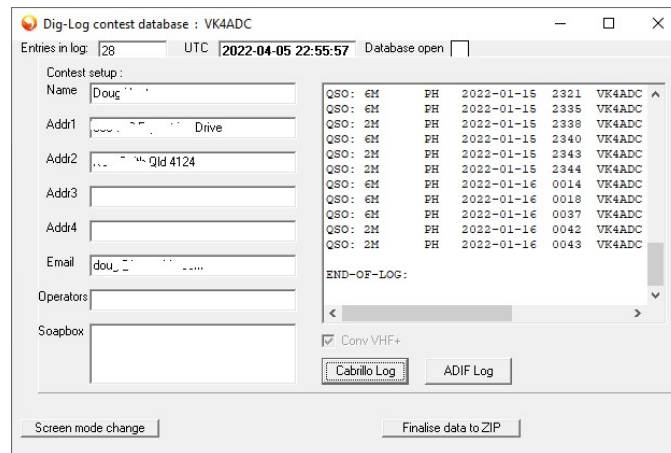
Screen mode change Finalise data to ZIP

Only now that a database exists, you can start up Dig\_Link and it will automatically find the folder details and be ready to go. The file will show as zero (0) contacts in the log, as would be expected.

At the end of the contest event, ( if necessary ) re-start Dig\_Log and it will display a log window of all of the contacts in the database. Note that there has not been an 'edit' facility provided, it is view only, since the contacts have already occurred and been added automatically from WSJT-X. No errors are expected since it has happened without any human log-entry activity.

Do not be concerned about any points totals as they are always recalculated by the Contest Manager. These displayed are an estimate only. All QSOs received are logged to the database regardless of timing irregularities, points calculated, or other contest rule violations.

The next step is to press the 'Screen mode change' button. The display changes to 'Contest setup' view.



Enter details in the displayed empty spaces, noting there may already be values present if the software has been used previously.

Most contests require a log in Cabrillo format so press the 'Cabrillo log' button. The generated log entry appears at top RHS and you can scroll through the header and QSO data areas.

A worthwhile step is to create the ADIF data file, it does not interfere with your contest entry BUT it does provide data about all of the QSOs made through WSJT-X, thus it is a form of insurance policy against a damaged database. It can be re-used to re-generate your data.

Your entry log file can be found in the same folder as the contest database created for this event. The file is named VKxxxx\_LogToSubmit.log, where the VKxxxx is the callsign entered when the contest database was set up.

Other files residing in that same folder will be VKxxxx.adi, calc\_log.txt, OpDetails.txt, possibly a couple of other text files. All are of use confirming the contest activity. Using the 'Open Folder' button will reveal exactly which files are in the database folder.

Time to tidy up now....

Two choices : both Dig\_Link and Dig\_Log have buttons marked 'Finalise data to ZIP'. Use either one as they both perform the same tasks

A brief black window will briefly flash on screen and then disappear. A file has been created in the same folder again, named as 'VKxxxx~ContestName~Dig\_Link.zip', eg VKxxxx~JohnMoyleFieldDay~Dig\_Link.zip but it could be 'VKxxxx~ContestName~Dig\_Log.zip' depending on which software was used.

Once done, close Dig\_Link and Dig\_Log. Finished now - all bar the log submission.

Start your email software, create a new email to (at this stage) [contestlogs@vk4adc.com](mailto:contestlogs@vk4adc.com), subject is 'Contest log', your callsign in the email body, attach the (/ a) ZIP from the database folder, send it.