Log4OM 2
Amateur Radio Software

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IW3HMH

User Guide

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Table of Contents

Welcome to Log4OM V2

This latest version of Log4OM, Log4OM V2, is refined to include extra facilities requested by Log4OM V1 users, OM and YL's alike, and to streamlining the user interface.

Log4OM V2 is free software developed by Daniele Pistollato IW3HMH for the complete management of the station log. The application is developed in C # and is compiled for any Windows operating system Windows 7 and above.

The software will only function on Linux machines using the “Wine” Windows emulator or Mac OS X machines using “Parallels” emulation software or using “Boot Camp” The Log4OM V2 team do not provide support for the program when its being run on Linux or Mac machines it is designed for use with Windows 8/10/11>>>

Log4OM V2 is designed to be easy to understand, while being easy to adapt to the requirements of the individual. QSO's are personal and so no constraints have been made to prevent the user from accessing QSO data (Including by direct access to whatever database source is used).

Each set, list or data in the program is stored in text files, JSON or XML which can be edited by the user.

This approach allows the user to modify the list of awards, contests, operating modes, bands, band plans, views of the QSO and all other available parameters and information. This information is freely accessible and usable by other

programs and can be updated independently by the user if required. The database used for storing the QSO's is SQLite, which is open Source and free tools are available to read and write data in the database from the Internet.

More advanced users may wish to use the MySQL support included in the program, which makes a networked logbook for multiple stations possible for contests and DXPeditions.

The software is freely downloadable at https://www.log4om.com and its use is free of charge and available for any private purpose, commercial users should contact the author.

Log4OM V2 is constantly evolving and new versions with new features are released regularly. The author endeavours to maintain compatibility with previous versions of the database. However, before performing any update, it is important to **make a backup** copy of the data because the publisher takes no responsibility for lost data.

Updating from a previous version of Log4OM Version 2

This is a simple matter of running the .exe installer to overwrite the current installation, the database and configuration will be retained but it is a wise precaution to **make a backup** before updating.

While the author attempts to avoid problems and errors it is imperative, as is normal for all software, that the user makes regular backups of data either manually or with the special functions provided in the program. Log4OM by default creates an ADIF backup on each program shutdown, keeping history of last backups and monthly saves.

Migrating from Log4OM Version 1

Log4OM version 2 cannot use the SQLITE database created/used by Log4OM version 1, it has an entirely different structure.

Users of Log4OM Version 1 should export an ADIF file in ADIF 3 format and then import it into the new version 2 of Log4OM once a database has been created or use a Log4OM v.1 backup as the ADIF source.

The configuration and set up of version 1 is not transferable to version 2 so it is necessary for users to complete the relevant configuration menus in version 2 when first installing the software.

Program features

- Accurate call lookup by multiple external sources QRZ, HamQTH, QRZCQ, HamCall and internal Clublog aggregated with automatic fallback to a secondary source if the primary contains no data.
- Award tracking and display fully configurable by the user.
- Band mapping of cluster spots with multiple band viewers individually filtered by mode and band by the user.
- Call sign online QSL graphics and large scale, scrollable location map displays
- Dynamic UDP inbound / outbound support over multiple ports and services for hardware including amplifiers
- Ease of use via mouse or keyboard
- Standalone contest support with integral CAT display.
- CW keyer with support for Winkeyer units and EESDR TCI protocol with integral CAT display.
- Expert Electronics SunSDR support using the TCI interface for all required features like CAT and keyer control.
- Full management of confirmations of the QSO data is available with different methods of delivery of the most appropriate confirmation type, including merging of QSO confirmation data from QRZ, LOTW & EQSL..
- Full SOTA & IOTA support
- Support for complex queries when searching for those without SQL knowledge.

- Integrated with online logbooks for LOTW, eQSL, QRZ.com, HamCall, Clublog, HamQTH, HRDlog.net etc.
- Integration with N1MM, PSTRotator, QARTest, WSJT-X, JTAlert, Gridtracker, EESDR 3.0, FLDigi etc.,
- Intelligent cluster aggregates the information from multiple cluster servers and HRDLog Super cluster with spot quality display.
- Intelligent cluster filtering provides automatic collection of award references.
- Log4OM cluster server for distribution of spots to other programs.
- Multiple Cluster viewer band map by band and mode
- Propagation analysis using VOACAP linked to call sign lookup and cluster which predicts probability of a connection (Contact)
- Local weather conditions using METAR/TAF
- Radio CAT control via either TCI, Omnirig or Hamlib
- Real time grey line presentation with long and short path tracks and headings.
- Search and filtering of data is the most advanced of any logging software.
- Security of user information and data with multiple backup options and locations.
- UDP Inbound, Outbound and Proxy facilities
- User configured layouts for cluster and logbook grids.
- Upload data to user's own web sites.
- Voice Keyer

Support for Log4OM V2 is supplied free from the author at

https://www.Log4OM.com

Getting Started

Conventions used.

 Indicates an INFORMATION you should not miss
 Indicates something you MUST read
 Indicates something you can read to get more in depth with Log4Om logics

It is essential for the correct operation of the software that the 'Initial start-up' section of the Program Configuration is completed.

Log4OM version 1 and version 2 can both be run at the same time because they use different installation paths and it is NOT necessary to uninstall version 1 before installing version 2

Installation

- Download the software from http://www.log4om.com
- Unzip (Unpack) the compressed download file to a convenient location
- Run the installer exe file

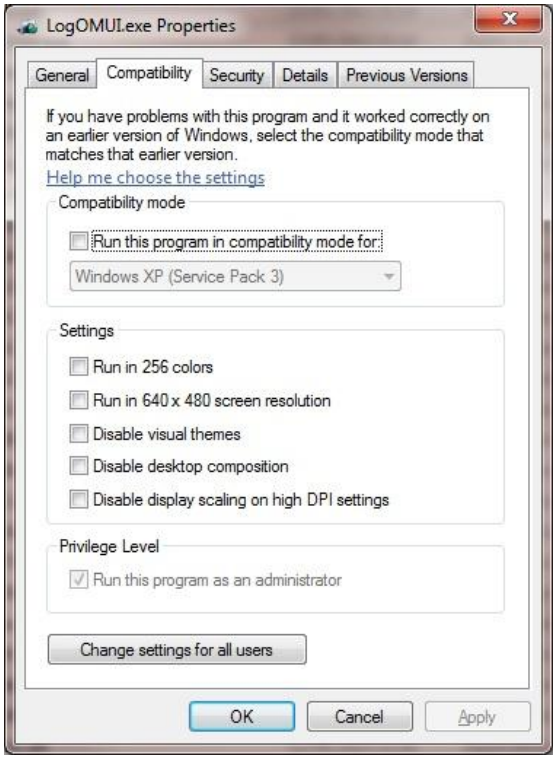
It is not necessary to run Version 2 as an administrator unless Omnirig or other associated programs (e.g. WSJT, JTALERT) are elevated for multithreading in which case Omnirig and all programs working with it should also be elevated (Run as an administrator).

Setting programs to 'Run as an administrator'.

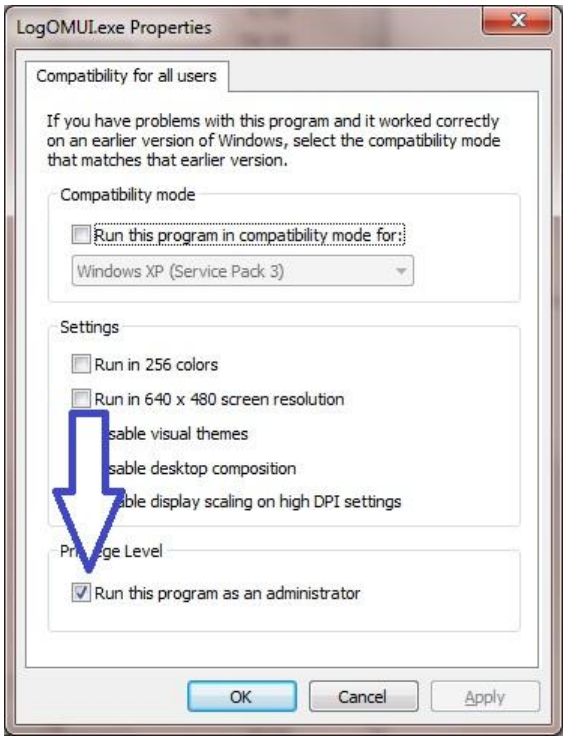
If users wish to synchronise CAT control with multiple programs it is imperative to use Omnirig and to set Omnirig and all programs sharing the Omnirig CAT control multi-threading to run as an administrator as follows:

- Locate the L4ONG application exe at C:\Program Files (x86)\IW3HMH\Log4OM NextGen
- Locate the L4ONG.exe and right click on the file and select 'Properties'.
- In the 'Compatibility' tab click the bottom button marked 'Change settings for all users'
- Check the 'Run as an administrator' box.
- Click 'Apply' followed by 'OK'

Repeat the above for Omnirig and any other programs sharing Omnirig.



Ensure the bottom box marked by the Blue arrow 'Run this program as an administrator' is checked.



Click 'Apply' and then OK to close this window.

Click OK for the remaining window and return to your desktop.

Restart Log4OM, the Communicator will run and be minimized as in the first image.

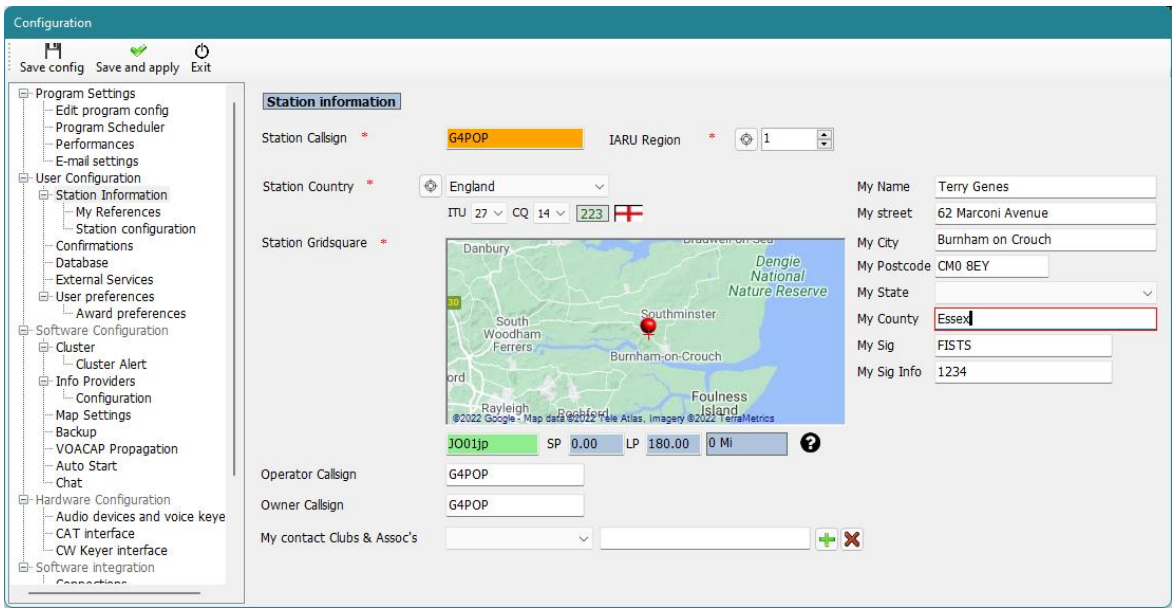
Initial set-up

Once the program is installed double click on the desk top shortcut. On initial start-up the user is presented with the window below, all information on the left-hand side **MUST** be completed to enable Log4OM V2 to select the correct band-plans, map, modes etc.

Minimum information:

- Station Call - This is the current call sign being used e.g., G4POP, G4POP/P or GW4POP/M
- Station country - The country where the Station call is located (In the examples above either England or Wales.) The ITU & CQ zones are automatically set upon entering the country but in the case of exceptionally large continents like Australia or the USA which cover many different zones please check that the selected zone is correct.
- Grid Locator - The 6-digit Maidenhead locator applicable to the current 'Station Call'
- Operators call - This may not be the station call perhaps because the station call is a special event or club call with many different operators using the equipment.
- Owner's call - The person who owns the station.

The personal information on the right-hand side of the screen is used when operating with CW Keyer or other facilities which employ macros containing the user's information.


Configuration
Save config
Save and apply
Exit
Program Settings
Edit program config
Program Scheduler
Performances
E-mail settings
User Configuration
Station Information
My References
Station configuration
Confirmations
Database
External Services
User preferences
Award preferences
Software Configuration
Cluster
Cluster Alert
Info Providers
Configuration
Map Settings
Backup
VOACAP Propagation
Auto Start
Chat
Hardware Configuration
Audio devices and voice keye
CAT interface
CW Keyer interface
Software integration
Station information
Station Callsign *
G4POP
IARU Region *
1
Station Country *
England
ITU 27 CQ 14 223
Station Gridsquare *
Danbury
Dengie National Nature Reserve
Southminster
South Woodham Ferrers
Burnham-on-Crouch
Foulness Island
Rayleigh
Rochford
©2022 Google - Map data ©2022 Tele Atlas, Imagery ©2022 TerraMetrics
JO01jp
SP 0.00
LP 180.00
0 Mi
Operator Callsign
G4POP
Owner Callsign
G4POP
My contact Clubs & Assoc's
My Name
Terry Genes
My street
62 Marconi Avenue
My City
Burnham on Crouch
My Postcode
CM0 8EY
My State
My County
Essex
My Sig
FISTS
My Sig Info
1234

Creating a Logbook Database

It is NOT possible to save or import QSO's unless the user first creates a database for the information to be saved to.

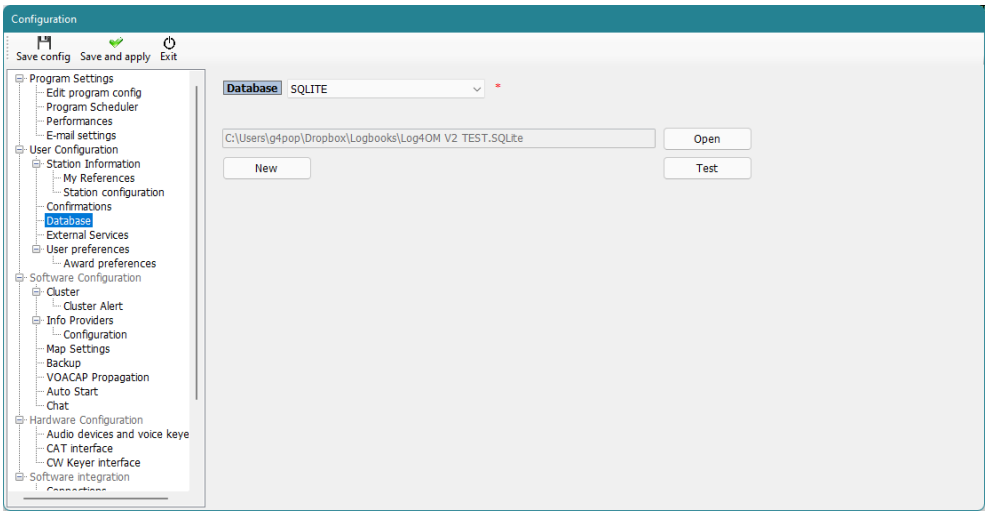
The user may have as many databases (Logbooks) as required e.g. Main call sign, Contest call sign or Special Event call sign etc.

However due to the powerful search and filtering tools in Log4OM V2, a single logbook may be used providing the QSO's have the correct Station and operator calls recorded. It is then possible to identify all QSO's using specific user call signs (Station or operator calls) and analyse the results for that set of QSO's. **The statistics are calculated on the whole database and not by station/call sign.**

The standard database is SQLIte but a MySQL database may be used for multi station contest operation of in the case of gigantic databases.

How to create a SQLite database.

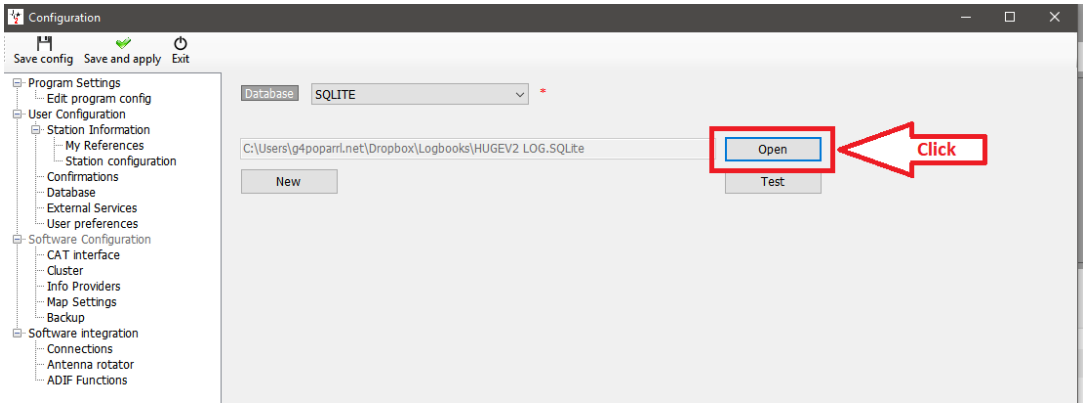
- Go to 'Settings/Program configuration/Database'
- Select the type of database (SQLite is best for normal users)
- Click the 'New' button
- Select a location to save the database (A cloud storage is a good choice)
- Give the database a meaningful file name
- Click 'Save' in the file explorer window.
- Click 'Save & exit in the 'Program Configuration' window



Changing Database

Log4OM allows an unlimited number of databases to be created, changing between databases does not require a program restart.

- File/Open New database
- Click on 'Open' in the 'Database' tab

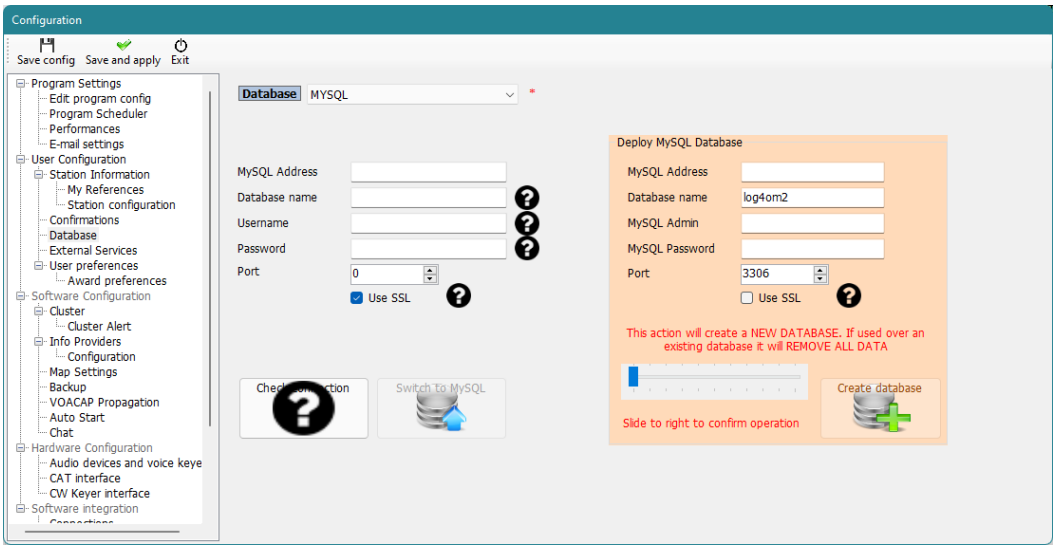


- Select the required database and click on 'Open'
- Click 'OK' in the connection test pop up window
- Click 'Save and apply'

Using MySQL Databases

MySQL databases are only required for contest or field day operations where multiple stations/operators are saving QSO's to a central database simultaneously or for gigantic databases over 150,000 QSO's

- Create a MySQL database using the MySQL tools provided by the MySQL database software
- Connect to it by going to the log4OM Settings/Program Configuration/Database tab and selecting MySQL from the 'Database' drop down menu at the top.



- Complete the fields on the left with the information from the MySQL database created earlier.
- Check the connection using the lower left button
- Complete the security fields to the right
- Click Create database.

Cloud storage of databases

Locating the database in one of the many "Cloud" storage providers is a very safe way of protecting the database because it can always be recovered either directly from the cloud or from any computer connected to that cloud storage facility.

It also makes it possible for the use of multiple logging sites e.g. Home on a local PC, Portable with a tablet or even a Windows phone. (Very useful for SOTA and WWFF operators.)

Unexpected results & data loss will be experienced if the log is updated simultaneously from more than one of the computers – Only use one instance of LOG4OM V2 at any time when working with a shared cloud hosted (google drive, dropbox, ...) database file (SQLite).

Typical situation:

A user has the following setup:

1. A main computer in the shack.
2. A laptop in the house used to update QSL sent and received status.
3. A Notebook computer used when operating portable or at an alternative location.

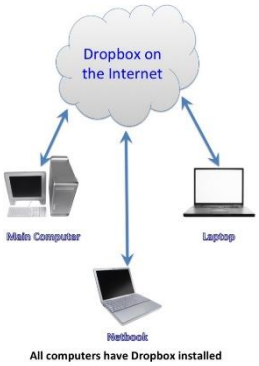
All computers must have LOG4OM V2 and cloud storage like Dropbox installed and use the same file located in a Dropbox folder, e.g. C:\.....\Dropbox\Log4OM Logs\Mylog.sqlite

In use:

- The user operates from his shack and the Dropbox log is updated and gets synchronized to the other two computers as QSO's are added.
- Later the user operates from another QTH or portable using a Notebook computer and the Dropbox log is updated and gets synchronized to the other two computers as QSO's are added.
- The following day using the laptop the user updates the Log4OM status for 100 QSL cards that came from the bureau and also 24 cards that were sent out - Dropbox synchronizes to the other two computers.

Result:

- All computers have the latest QSO's and also the latest QSL status.
- If the automatic backup facility included in Log4OM V2 is used to backup to Dropbox also the user then enjoys full security by having a copy of his log and a backup on all computers that he has connected to Dropbox.

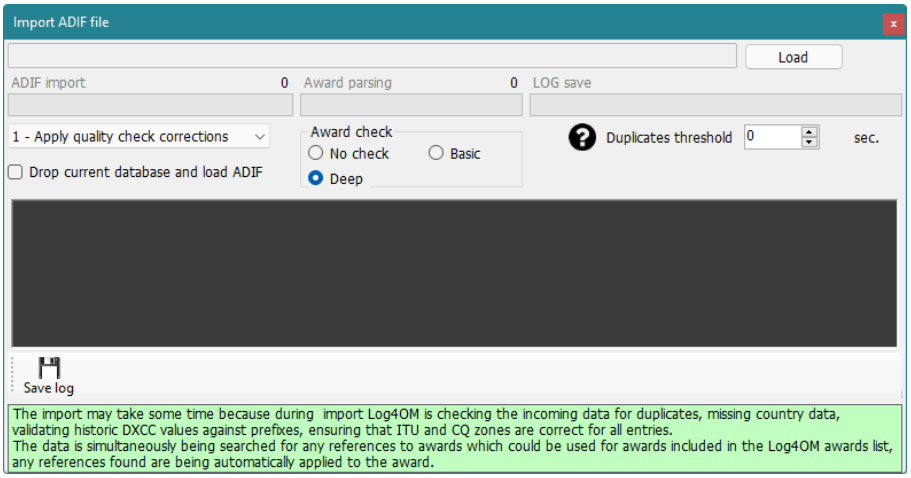


If the user needs to use all three computers simultaneously, as in a contest situation with three different stations logging to a central logbook, then it is necessary to use a MySql database or a LOCAL SQlite file not accessed through cloud storage (local network shared)

ADIF Import

Once a database has been created an ADIF file exported from any other logging program can be imported to Log4OM V2.

- Click menu 'File/Import ADIF'
- Click on the 'Load' button



- Navigate to the location of the ADIF file to be imported
- Select the ADIF file and click 'Open'
- Select the drop-down menu option ‘Apply quality check corrections' to correct any DXCC errors in the file.
- The 'Duplicates threshold' allows the user to set a margin for matching the QSO time +/- nn seconds up to 60 seconds to avoid causing duplicates due to time errors. This function is used when importing QSO from other sources that do not have a time resolution to seconds (e.g. QRZ.COM exports) and it is required to merge the QRZ log with the Log4OM logbook.
- Select the depth of award checking required
- Checking the box 'Drop current database on load ADIF' if is required to replace the existing QSO's
- Click 'Import' and wait to be notified that the import is complete.

Note all data will be lost and replaced by the incoming ADIF file!
leaving this box unchecked will merge the imported data with the existing data.

NOTE QSO’s are not uploaded to the online logbooks like QRZ, Hamlog etc during ADIF import

Any changes made to the incoming data will be listed and a copy of the log file containing details of any changes can be saved for future reference by clicking the **'Save log'** button at the bottom of the import window.

Illegal suffixes

Strange suffixes may cause some errors during import and cause an incorrect DXCC number and country name to be applied. This is beyond the control of Log4OM or its author and is a practice that shoud not be encouraged.

Examples:

- A station incorrectly using /LH as a suffix intending to signify a 'Light House' will be interpreted as a Norwegian station and recorded as such!
- A station incorrectly using /PM as a suffix intending to signify 'Pedestrian Mobile' will be interpreted as an Indonesian station and recorded as such!

/MM (Maritime Mobile) and /AM (Aeronautical Mobile) will be saved without a country name or DXCC due to the locations being outside any entity.

/P (Portable), /A (Alternative location in some countries), /QRP, /QRPP and /M (Mobile) will have no impact on the import and the country will be identified correctly by the normal call sign prefix.

Call checking also includes checking the valid operational dates of special calls and DXPeditions to ensure further accuracy.

Multiple Configurations (Identities)

There may be occasions where more than on configuration (ID/Set up) is required, if for example if the user needs to run a club station and his/her home station or where there is more than one operator in a home and they each need separate setups for their respective call signs, logbooks, confirmations etc on a single PC

Log4OM provides a facility for an unlimited number of separate configurations may be used on a single PC

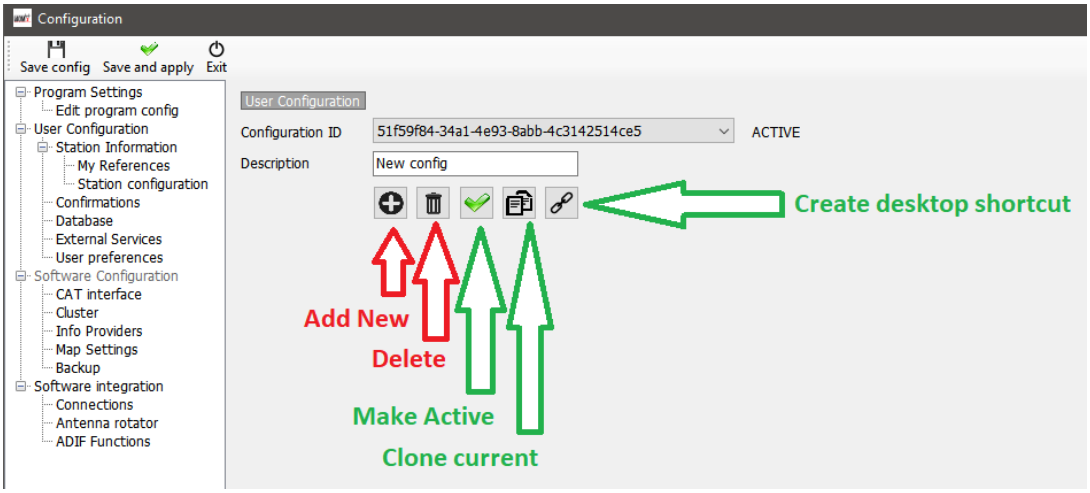
In the settings/Program configuration/User configurations tab these separate identities (Configurations) can be created, either by:

1. Creating a completely new identity by clicking on the + 'Add new config' button.
2. By cloning an existing configuration by clicking the 'Folders' icon 'Clone current config' button, this saves time if the new configuration is similar to the original, perhaps just a /P call with different Location.

Creating a desktop shortcut for a new ID

A desktop shortcut can also be created for each current config by clicking the 'Chain' icon 'Create link on desktop'

Configs are deleted by first selecting the config to be deleted from the drop-down list followed by clicking on the 'Trash can' Icon

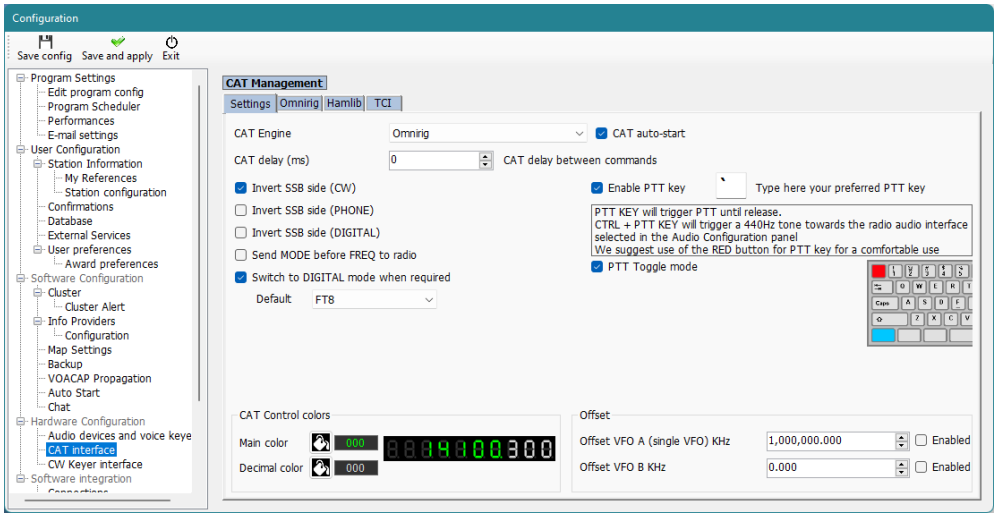


Creating a new Identity (Config)

- Open the settings/Program configuration/User configurations tab
- Either click the New or clone icon as identified above
- Add a name for the ID in the Description field
- If a new ID is being created complete the various information for a new configuration or if 'cloning' an existing config make whatever changes are required for the new configuration.
- Click the 'Chain' desktop shortcut icon to create a new desktop shortcut.
- Click the green check mark to make the configuration active.
- Click 'Save and Apply'

Radio CAT Control

To select the CAT Interface, click on 'Settings/Program configuration then select 'CAT Interface'.



- Select the required interface (Omnirig, Hamlib or TCI)
- Check the 'Auto start CAT' box
- Click on 'Save and apply'

Various other options are provided for the idiosyncrasies of various radios

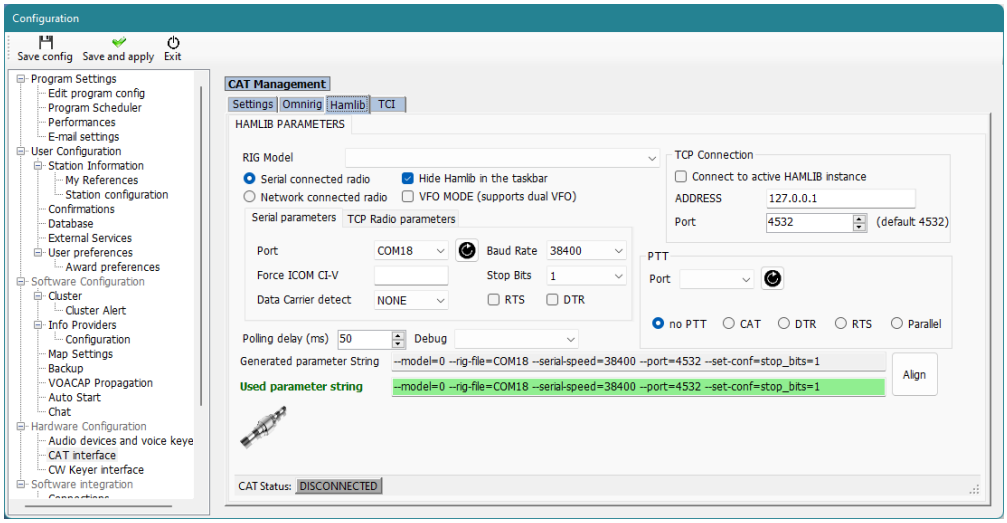
If Omnirig was not installed during the Log4OM install sequence and Omnirig is selected the user must download and install Omnirig from http://dxatlas.com/OmniRig/ - Then re-start Log4OM V2.

Connecting CAT

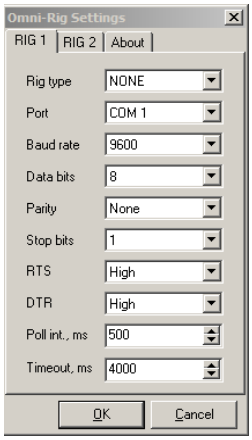
Click on 'Connect/CAT/Show CAT interface'

Depending on the selection made in the Program configuration either the Hamlib or the Omnirig interface window will appear as below

Hamlib interface



OmniRig Interface



Select the appropriate radio and set the com port and baud rate to match that of the radio and any other parameters for the equipment to be used and then click Open/OK.

TCI Interface

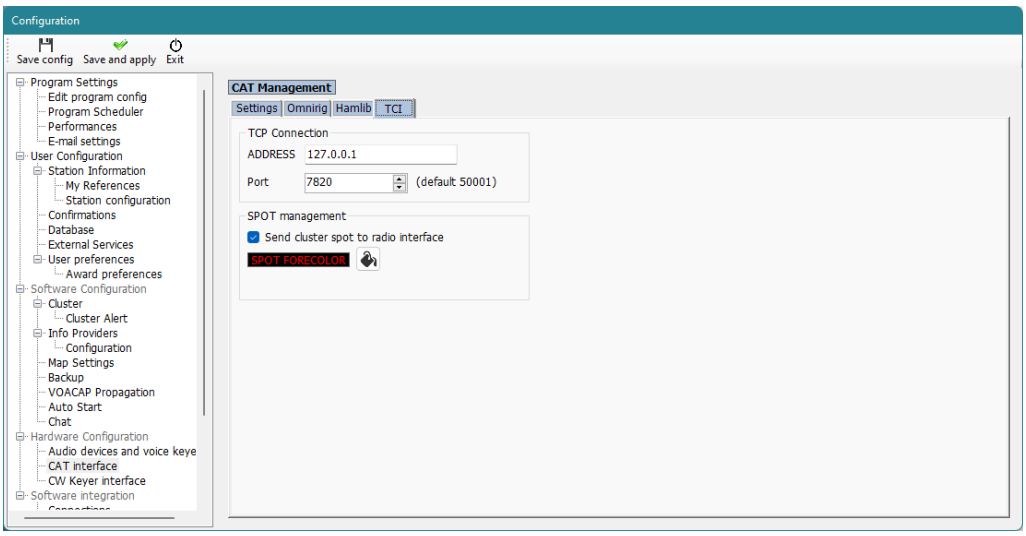
Log4OM provides unparalleled support for the SunSDR range of radios using the TCI protocol provided by Expert Electronics EESDR software as follows:

TCI CAT control

The TCI protocol provides two-way integration of band, frequency and mode information for both VFO's on each receiver with Log4OM.

Log4OM switches control automatically to the receiver that has focus and obtains Band, Frequency and mode data.

This CAT interface is specifically for the Expert SunSDR radios, the ports shown are for illustration purposes only they may be different on individual installations.



TCI PTT

PTT can be activated from the keyboard via the Log4OM/TCI interface

TCI CW

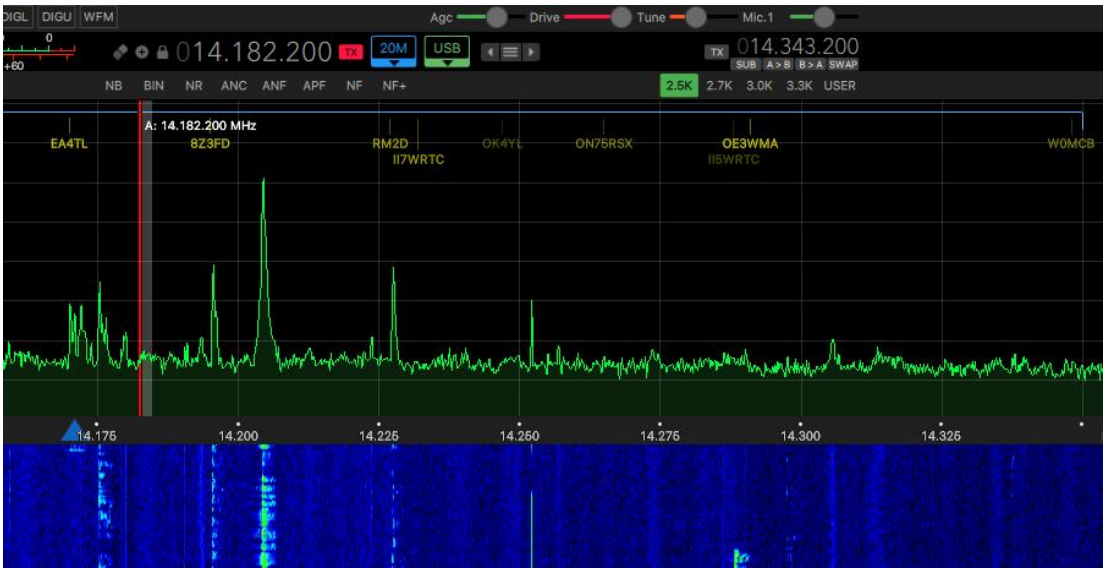
CW using the CW keyer control interface included in Log4OM for the EESDR receiver currently being used, thus providing auto online lookup of calls, user defined macros, various keyer controls including speed and QSO logging all from a single user interface. See section Keyer in this guide

TCI EESDR Cluster Spots

Cluster spots from the Log4OM cluster are automatically displayed on the EESDR spectrum

Left clicking on a displayed spectrum spot automatically sets frequency and mode while at the same time entering the call in the Log4OM QSO interface for online lookup and logging.

Right clicking on a displayed spectrum spot automatically enters the call in the Log4OM QSO interface for online lookup.



Double clicking on a spot in the Log4OM clusters or band maps instantly synchronises the SunSDR band, frequency and mode with that of the spot.

Once connected the green CAT indicator at the bottom of the Log4OM V2 window should light, and the frequency will be displayed at the top.

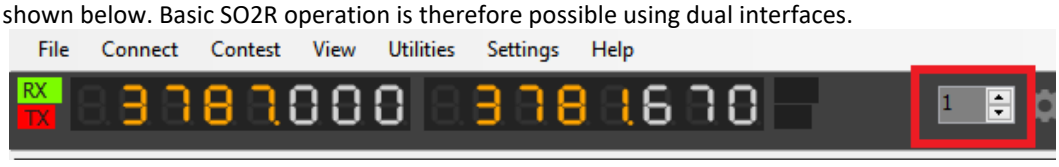
CAT Screen

Selecting CAT screen from the 'Connect/CAT' menu provides a large floating CAT control window which provides the following features.

- Change frequency by scrolling the digital display numerals with the mouse scroll wheel or by clicking the left mouse button to increase the frequency or right clicking to decrease.
- Change bands and modes by using the buttons
- Change between rig 1 and 2 if using Omnirig by selection at the top right.
- Set VFO offsets by clicking the settings cog icon at the top right of the window

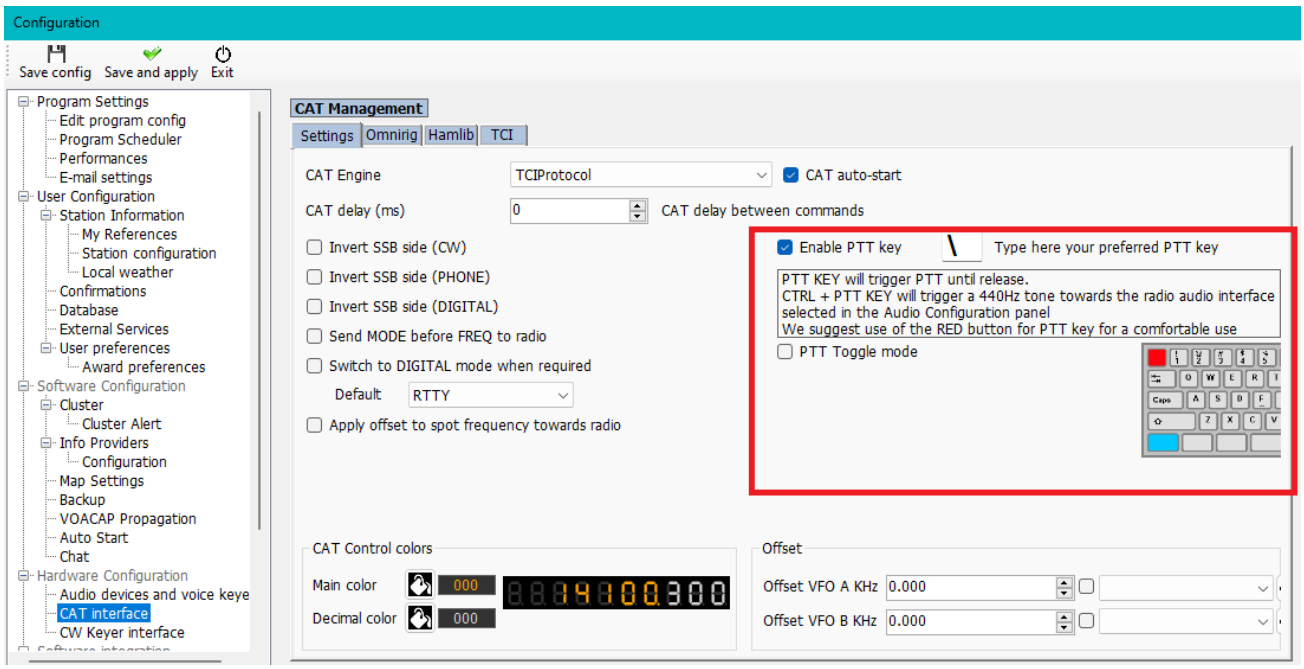
SO2R and dual radios

When using Omnirig it is possible to switch between two different radios using the Rig 1 & Rig 2 selection on the toolbar as shown below. Basic SO2R operation is therefore possible using dual interfaces.



PTT and Tune

In the Settings/Program Configuration/CAT Interface tab it is possible to select which keyboard keys trigger PTT and Tune.



- Check the 'Enable PTT Key' check box
- Select the required keyboard key
- Click the 'Save and Apply' icon

The action is a press and hold not a toggle on/off action - PTT or tune will cease when the keyboard button is released.

Icom IC7300 CAT control for multiple DATA programs.

The IC7300 and similar radios that have two CAT connections that can be separated provide an easy and unique method of connecting multiple software data packages.

1. Having installed the Icom USB port drivers to the PC
2. Connect a USB cable to the rear connection on the IC7300 and to a USB port on the PC
3. Connect a USB CI-V cable to the 'REMOTE' socket on the back of the IC-7300 and another USB port on the PC.
4. Make a note of the port numbers for these two connections as shown in the PC device manager

Setting up the IC7300

In Menu/Set/Connectors/CI-V set the following

CI-V Baud rate = 19200
CI-V Tranceive = OFF
CI-V USB Port = Unlink from (Remote)
CI-V USB Baud Rate = 19200
All other settings as default

Setting up Log4OM

Download and install Omnirig.

In Settings/Program Configuration/CAT Interface

CAT Engine = Omnirig
Check the box = Auto start CAT
Check the box = Invert SSB side (CW)
Check the box = Switch to digital mode when required
Default = Select FT8 from list
Click 'SAVE AND APPLY'

In the Omnirig menu

1. Select the radio from the drop-down list (IC7300 DATA)
2. Select the com port number for the USB – USB connection to the radio and set the Baud rate to 19200
3. Click OK (Frequency and mode changes on the radio will be reflected in Log4OM

Setting up WSJT CAT control

In WSJT File/Settings/Radio

Select OMNIRIG Rig?? In the Rig menu
Set PTT method to CAT
Set Mode to DATA/PKT
Set Split Operation to FAKE IT
Click OK

Setting up FLDIGI CAT control

In FLDigi Configure/Configure Dialog/Rig Control/Hamlib

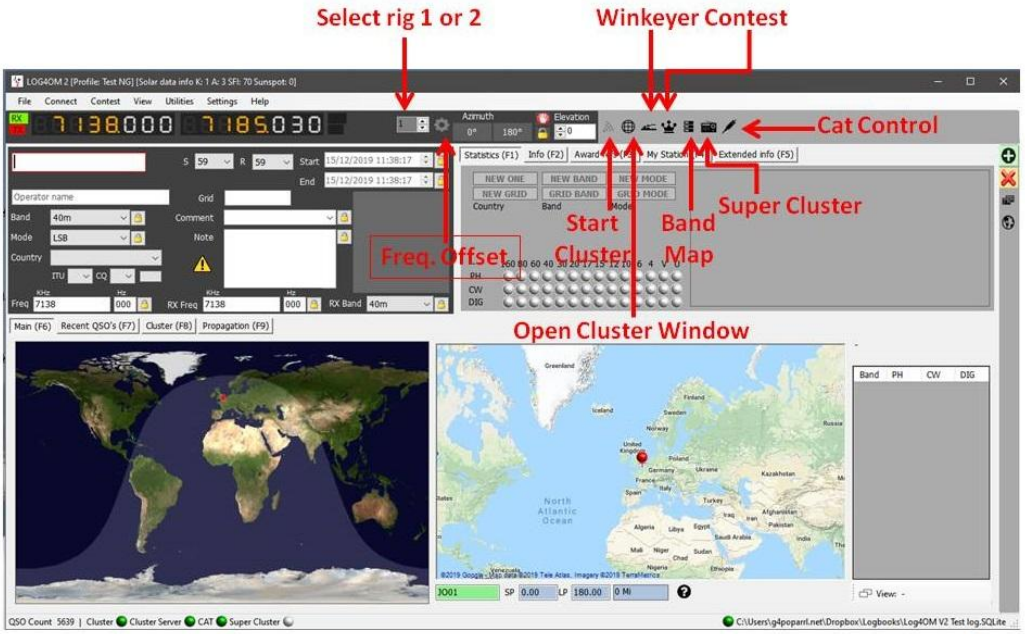
Select Icom IC7300 (Stable) from the Rig menu
Check the box 'USE HAMLIB'
Select the USB CI-V – Remote com port number in the 'DEVICE' menu
Set 'BAUD RATE' to 19200
Click on 'INITIALISE'
Click 'SAVE'
Click 'Close'
In the Configure menu click on Save Config

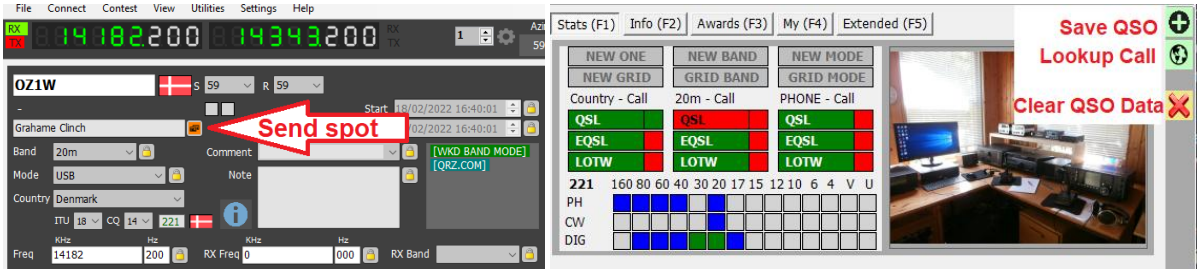
Changing freq and mode on the radio will be reflected in Log4OM, WSJT and FLDigi and Freq and Mode changes in those programs will be replicated on the radio.

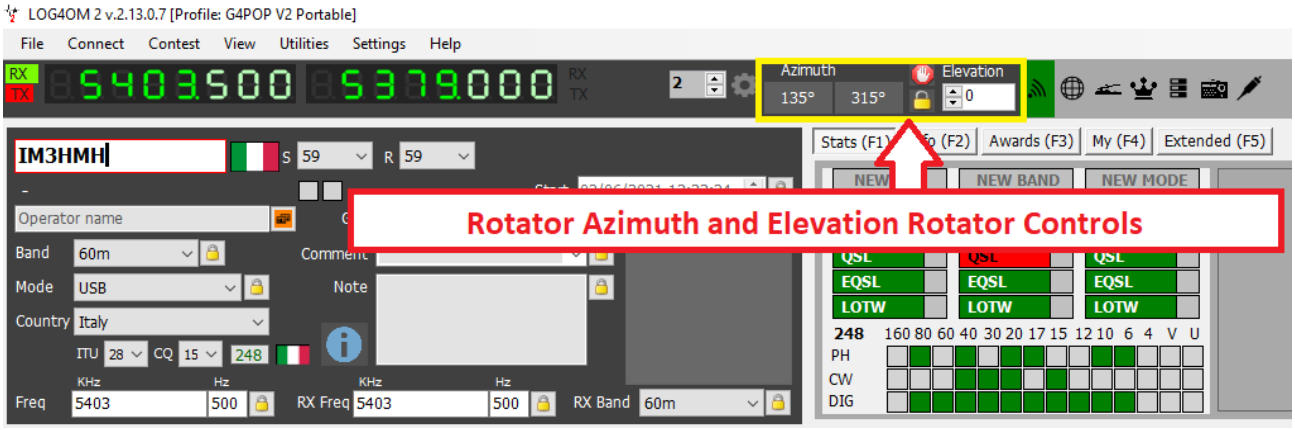
All other WSJT/Log4OM/FLDigi setup instructions for logging are detailed elsewhere in the user guide.

Main UI Icons & Controls

A different range of icons and symbols is used to that previously employed in version 1, here is an explanation of their uses.







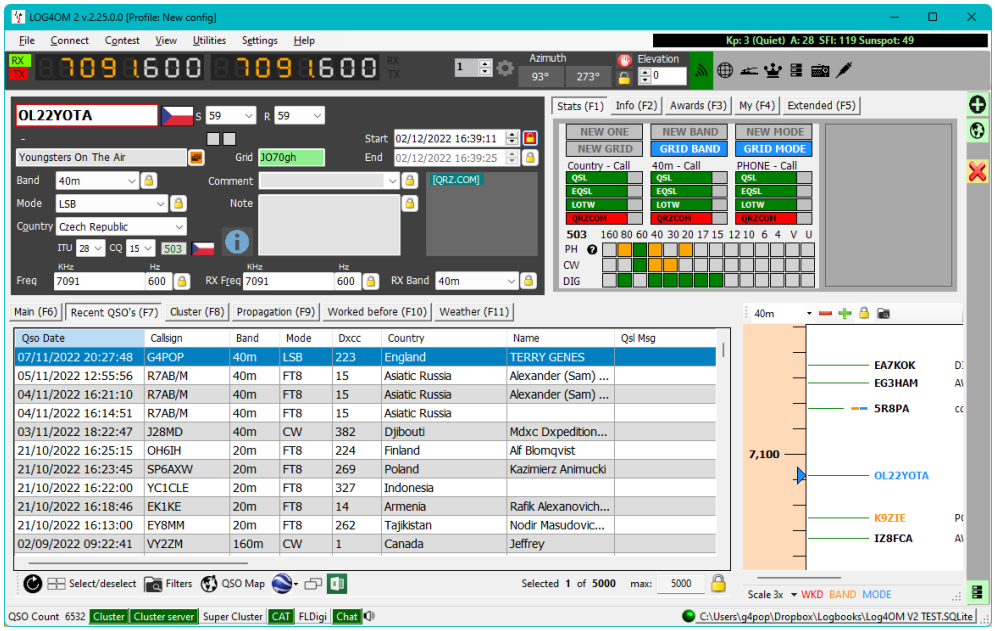
Rotator control when connected using PSTRotator for Azimuth, Elevation, parking and locking is available by using the controls in the screen shot above.

Save QSO can also be achieved with keyboard RETURN key during QSO data entry.
Clear QSO Data can also be achieved by using the keyboard Esc key.

	Cancel/clear		OK		Add/save
	Close		Background colour		Foreground (Font) colour
	Connected		Upload		Download
	Upload data		Delete data		Add data
	Download data		Delete		Primary choice / Contest mode
	Save		Settings		CW Keyer
	Open Cluster		Start Cluster		Refresh
	Select/deselect		Filters		Band Map
	Super Cluster		Start		Stop Rotator
	Park Antenna or Lock a field		Send spot		Web Lookup
	Detach		Delete		Clone

Managing Layouts

The layout, titles and column order of most grids can be tailored to the user's requirements.



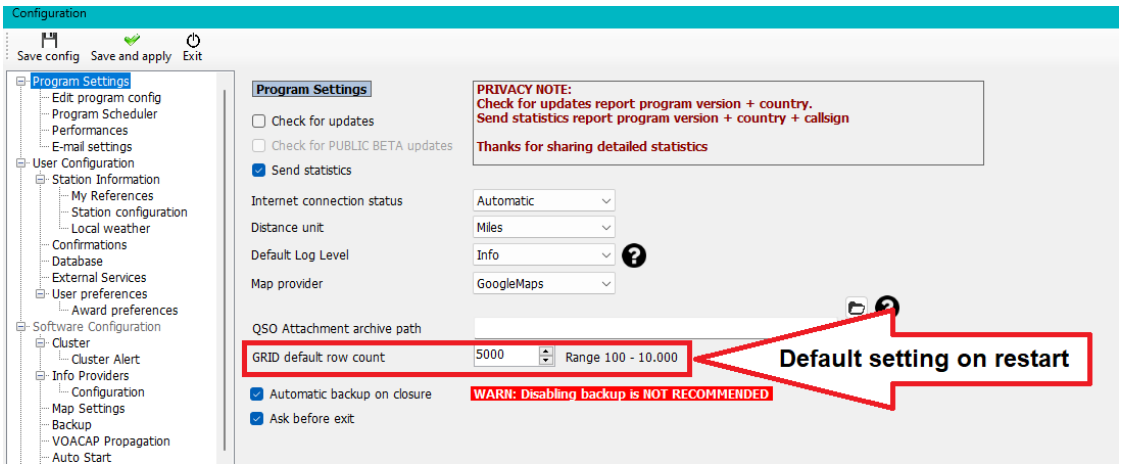
Records displayed

At the lower right-hand corner of some lists there is a value displayed (Default 5000) this is the number of records being displayed **not the number of records in the database.**

Changing the number to a higher/lower value will display more/less records in the grid, setting the value to zero will display all records in the database.

PLEASE NOTE

The value set in the lower right corner of grids will be reset to the default value set in the Settings/Program Configuration/Program settings upon restarting the software.



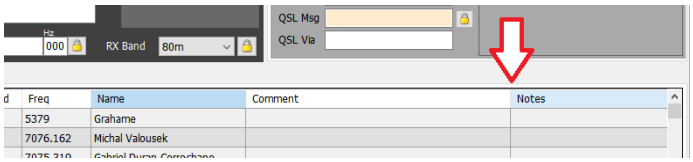
The default range is 100 – 10000 and cannot be set to values outside this range

Column Layout and Title Editing

The row order, width, title names and included data can be edited in Log4OM V2 by the user in all tables e.g., cluster, recent QSO's etc.

Adjusting column widths

Select the vertical divider between column title headers and drag to widen or narrow column widths.

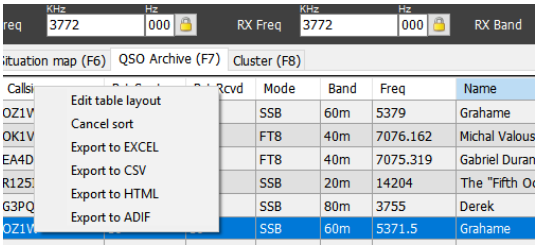


Changing column order

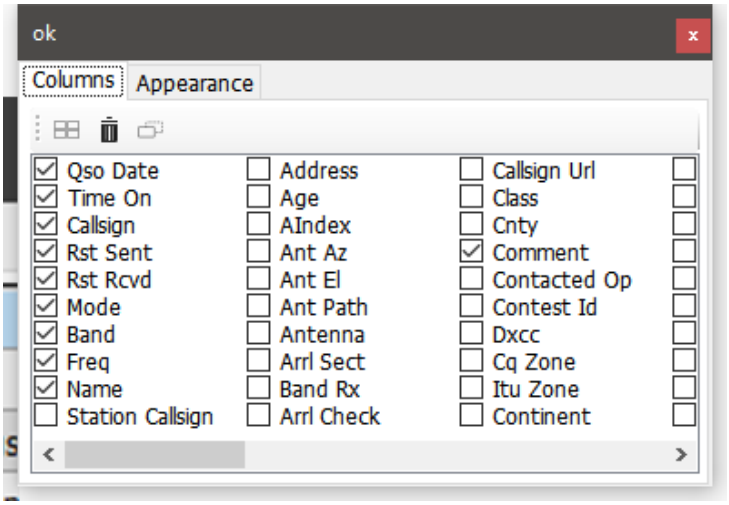
To change the position/order of the columns left click and hold in the middle of a column title then drag left or right as required to re-position.

Adding and removing columns

Right click in a title field and select 'Edit table layout'

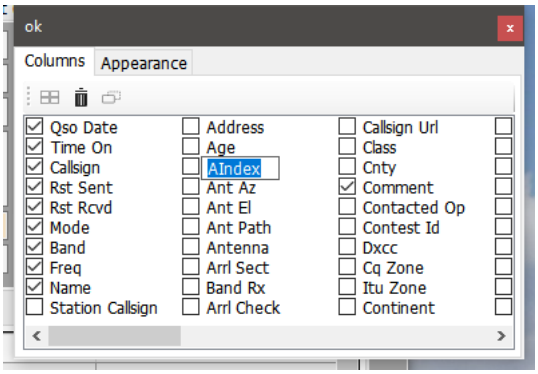


Check or uncheck the boxes to select the desired columns



Changing column titles

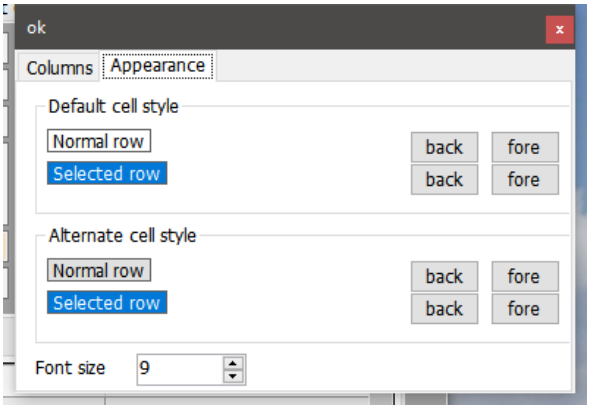
By slowly left clicking twice or by pressing the F2 key on the keyboard on any title in the 'Edit Table Layout' window enables the column name/title to be edited or reset to default layout.



Clear column name to reset to its default value

Colour and sizes of text

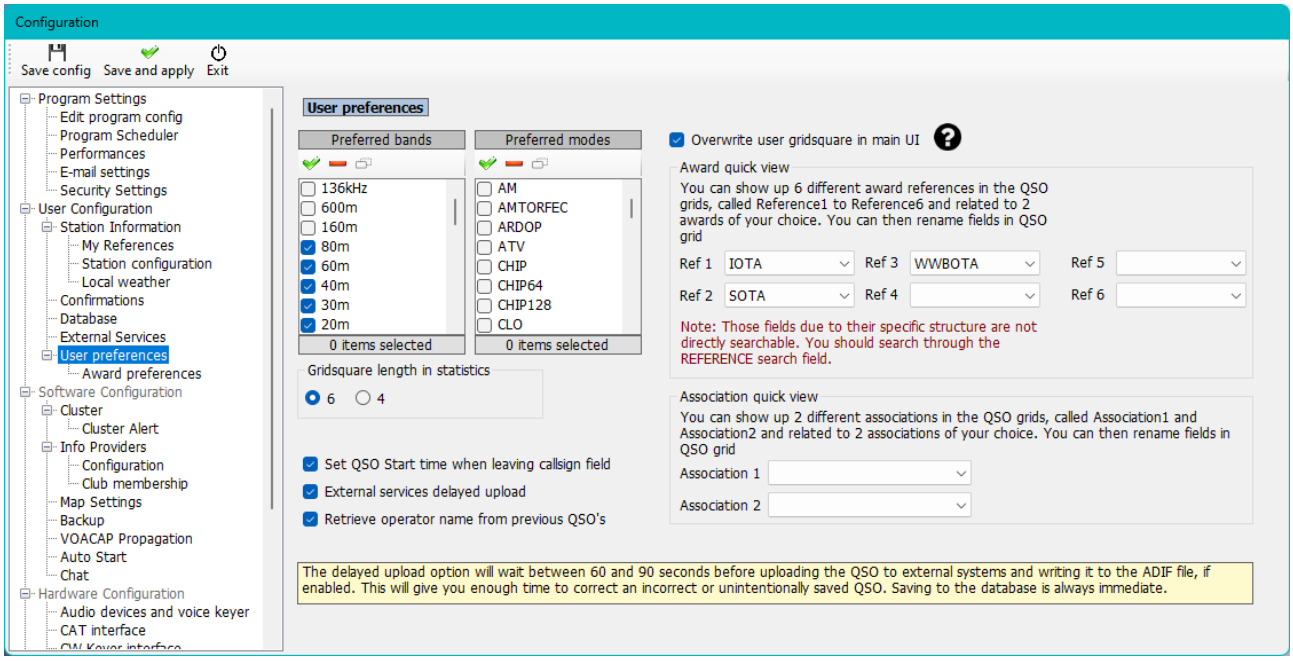
Selecting the 'Appearance' tab in the 'Edit Table Layout' menu allows font size selection and cell/text colour changes.



Displaying references & Associations

It is possible to list two award references and two associations in the QSO grids e.g., IOTA, SOTA etc

In the settings/program configuration/user preferences tab select the reference to be displayed in the ‘Ref 1’ to ‘Ref 6’ fields’ - Click save and apply

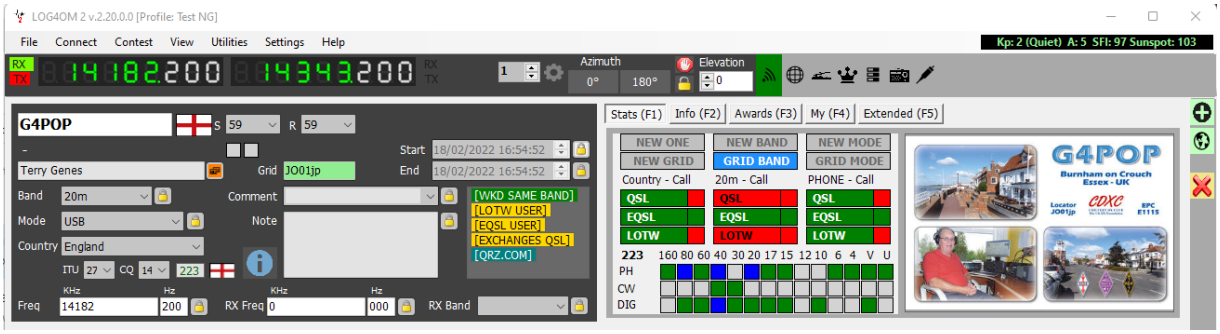


The title of the two reference fields can be changed in the edit table layout dialog as instructed above.

It is not possible to change column widths, titles etc in the awards grids

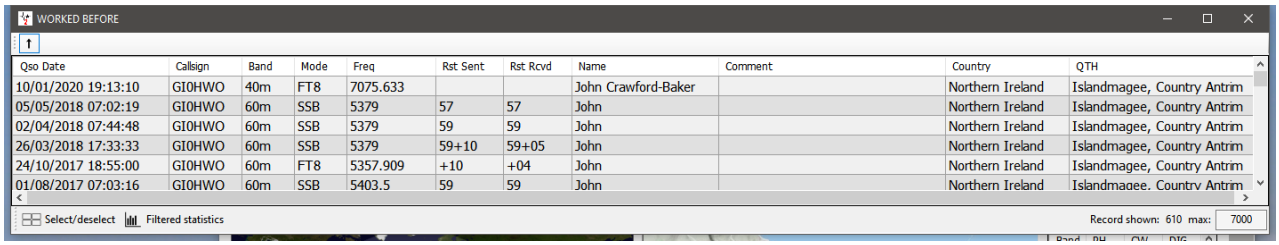
QSO Input

Log4OM automatically looks up a call sign added to the QSO input area using the on-line services selected, The Clublog Call Exception (Clublog Call Exc) database, QSL Manager database, LOTW database and the users logbook to check if the station has been worked before and displays the results of the lookups together with a list of the data sources found for the call.



Some of the data sources in the list are hyperlinks which can be clicked on to open either a worked before window or browser displaying the details of the call sign.

Here is an example of clicking on the WORKED BEFORE Hyperlink. (The Worked Before window can also be opened from the 'View' menu or the Worked before (F10) tab in the main UI)



Log4OM downloads the entire Clublog Call exceptions and prefix lookup database. (Clublog Call Exc) One of the driving reasons for Club Log's existence is to increasing logging accuracy and this database used in conjunction with other data collated by Log4OM ensures the best call/prefix accuracy available in any logging software.

Clicking the arrow icon at the top left corner of the worked before window once will set 'Stay on top of other windows' clicking the arrow icon twice will revert to normal and the Worked before window will behave as normal.

The right-hand side of the input panel displays the bands/modes the country has been worked on and the confirmation status for that country/Band/Made plus the grid reference status.

Green = Country WB4 on that band/mode
Blue = The entered call sign (And consequently that country) has been worked on that band/mode

The upper part of the graphic above shows that:

1. The country is confirmed by QSL, EQSL & LOTW (Rectangular green boxes)
2. The country is confirmed by EQSL on the band (20m) (Rectangular green boxes)
3. The country is NOT confirmed by QSL or LOTW on the band (20m) (Rectangular Red boxes)
4. The country is confirmed for the mode (Phone) by all three confirmation methods (Rectangular green boxes)
5. The station (Call) has been confirmed on the band (20M) & mode (Phone) by EQSl (Small square Green boxes on right)
6. The station (Call) has NOT been confirmed on the band (20M) or mode (Phone) by QSL or LOTW (Small Red square boxes on right)

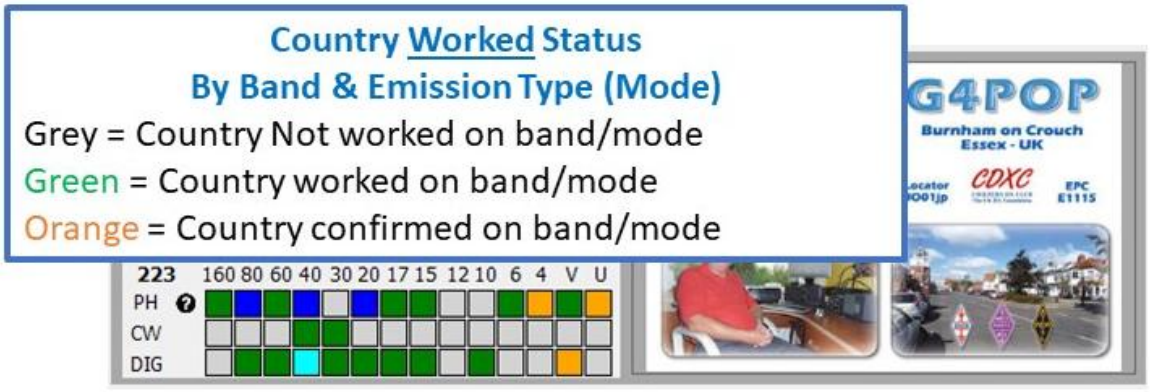
The lower part of the graphic above shows that:

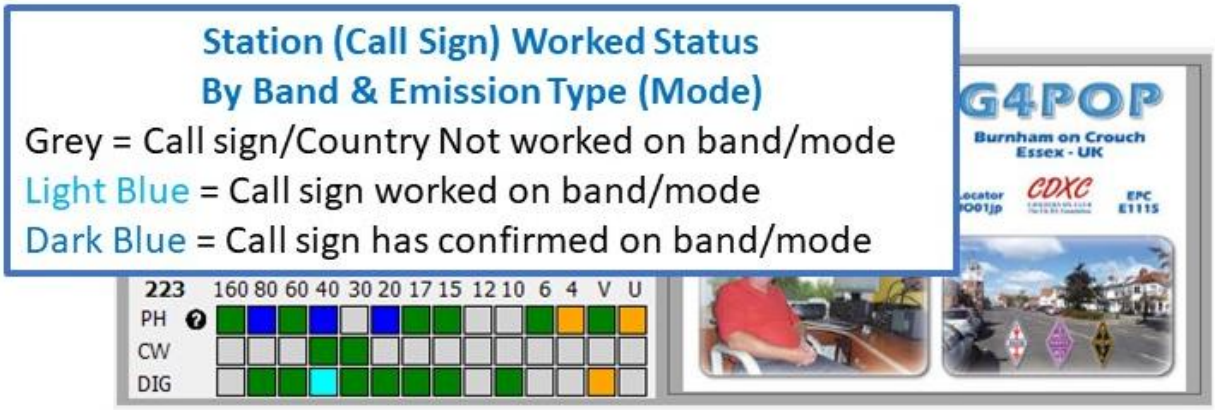
1. The station (Call) and therefore the country has been worked on:**(Blue squares)**
   80, 40, & 20M Phone and 40M by Data mode
2. The country has also been worked on: **(Green squares)**
3. 160, 60, 17M & 15m, 6m, 4, 2m & 70cm on Phone
   40m & 30m on CW
   80, 60m, 30, 20, 17m, 15m, 10m & 2m on a digital mode

On the right is displayed whatever image is available from the look up source (QRZ etc.) Bio page

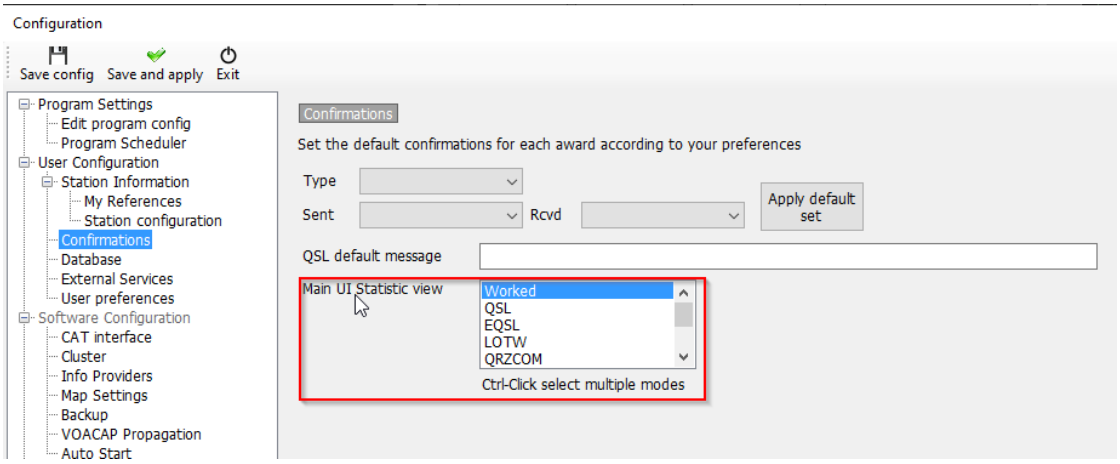
Statistics (F1) matrix

The matrix display in the Statistics tab displays confirmation status by confirmation type by country, band & mode as depicted below.





Statistics shown here are derived by the program settings through the CONFIRMATION menu:



The extreme right side of the input area displays the image, if any, available from the lookup site.

Frequency, band and mode data entry

If a radio is connected via CAT control the frequency, band and mode data is entered automatically, without a radio connected this data can be entered manually.

For manual entry of QSO's the frequency, band and mode can be locked by pressing the 'Padlock' icon to the right of each field.

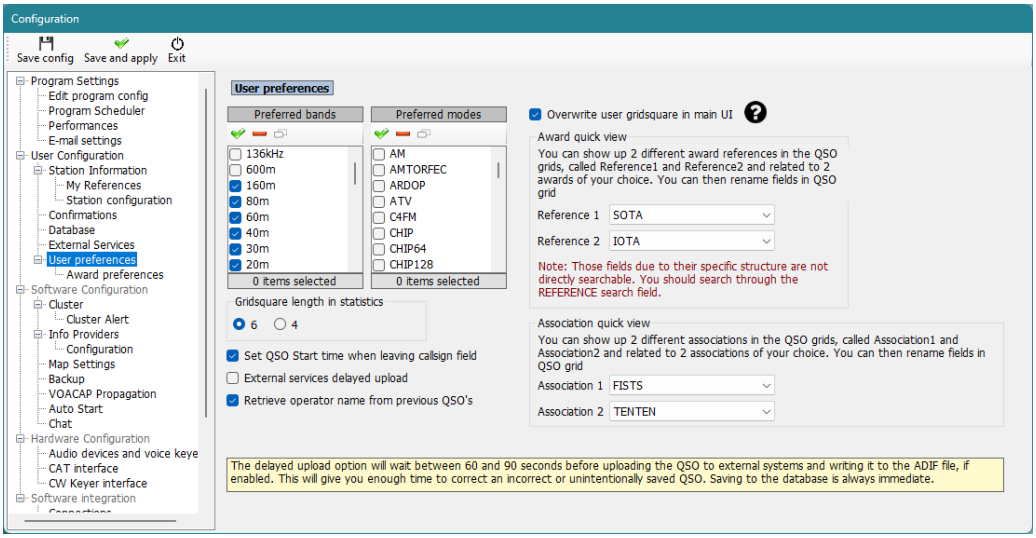
Date and time entry

The date and time is derived from the computers clock and is automatically adjusted to GMT/UTC/Zulu time.

The date and time can be set manually, as when entering historic QSO's and can be locked using the 'Padlock' icons to the right of the fields.

QSO Start date and time

The date and start time can either be the date and time the QSO is saved or if the 'Set QSO start time when leaving the call sign field' box is checked in the Settings/Program configuration/user preferences tab, the time will be set as the cursor leaves the call sign field by using the Tab key or selecting another field with a mouse cursor click (See Performance tab of configuration menu)

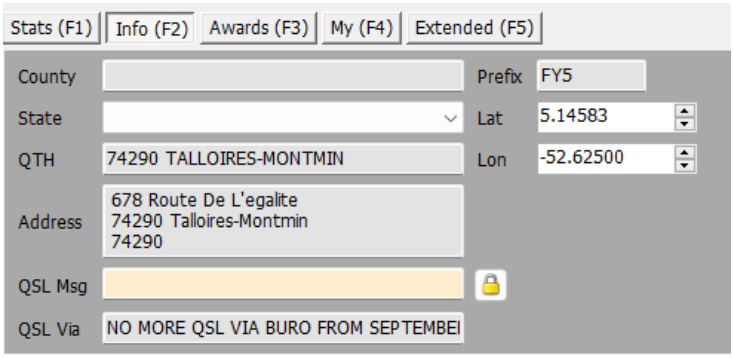


Pause/Break key – Start time

This may be used at any time to lock the date and time or unlock it for QSO start time recording

Information (Info F2)

This tab in the QSO input area displays additional information about the station being worked/looked up



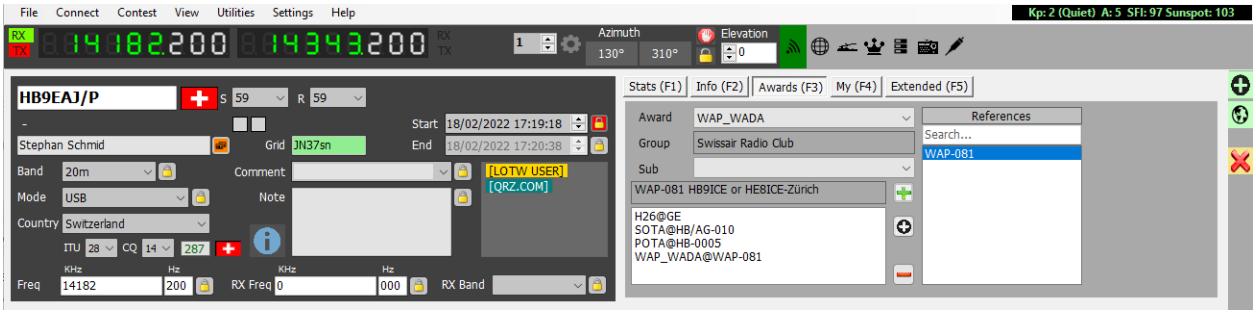
NOTE: The QSL Msg (ADIF field QSLMSG) is the message that the user wants to be included in the confirmation to eQSL etc

Adding special award references

If it is necessary to add an award reference like IOTA, SOTA, WWFF etc then the Award Refs. (F3) tab should be opened, the award selected and the reference added to the list box.

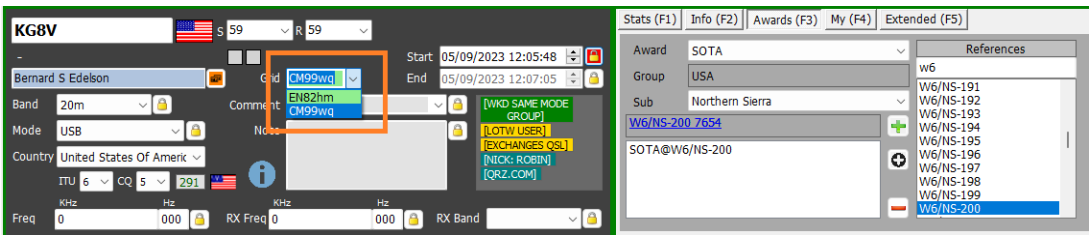
Standard awards like DXCC, WPX, WAC, WAS, Marathon etc are calculated from the standard fields already present so no user intervention is required for those awards.

If an award reference is recognised from the cluster comments field, it will be automatically added to the reference list.



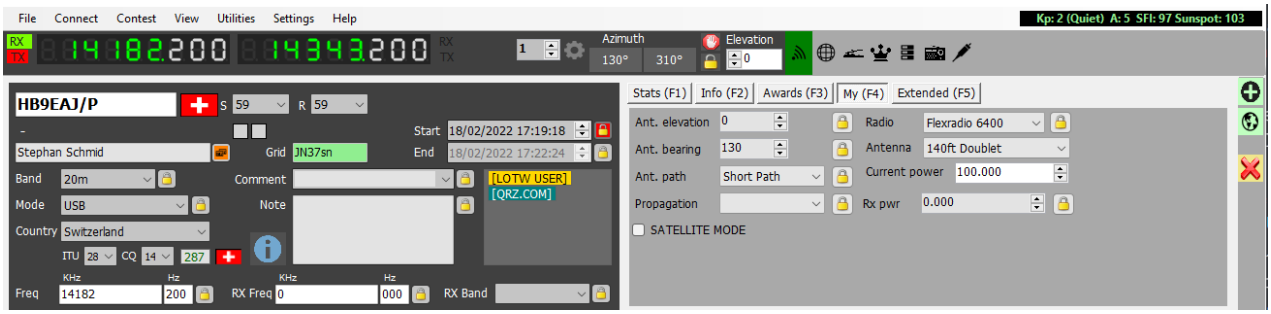
Grid locators and award references

Some award references like SOTA contain the grid reference of the particular activation site, if this available Log4OM will provide a selection drop down menu for the grid reference allowing the user to select either the grid reference for the activation site or that found from the online lookup which is invariably the other stations home QTH.



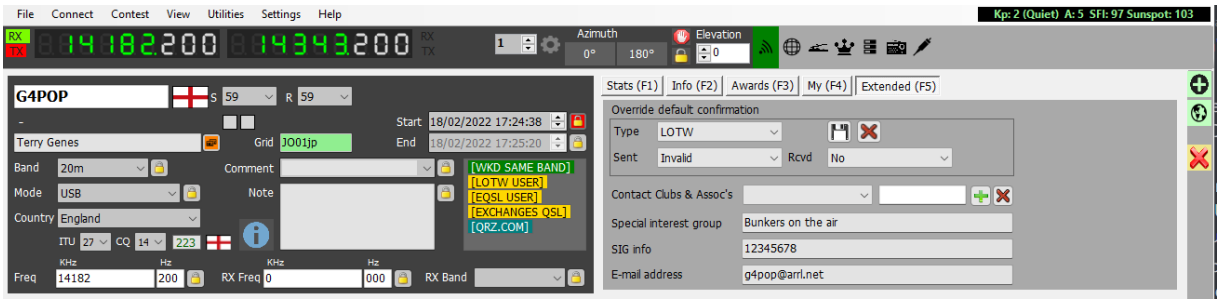
Changing a user's station information

It is also possible to change the information with regard to the user's station like antenna, radio used, power levels in the My Station (F4) tab, before saving the QSO.



Overriding the default QSO Confirmation method

By selecting the QSL's (F5) tab it is possible to override the default QSL confirmation settings selected in the 'Program Configuration/Confirmations' menu.



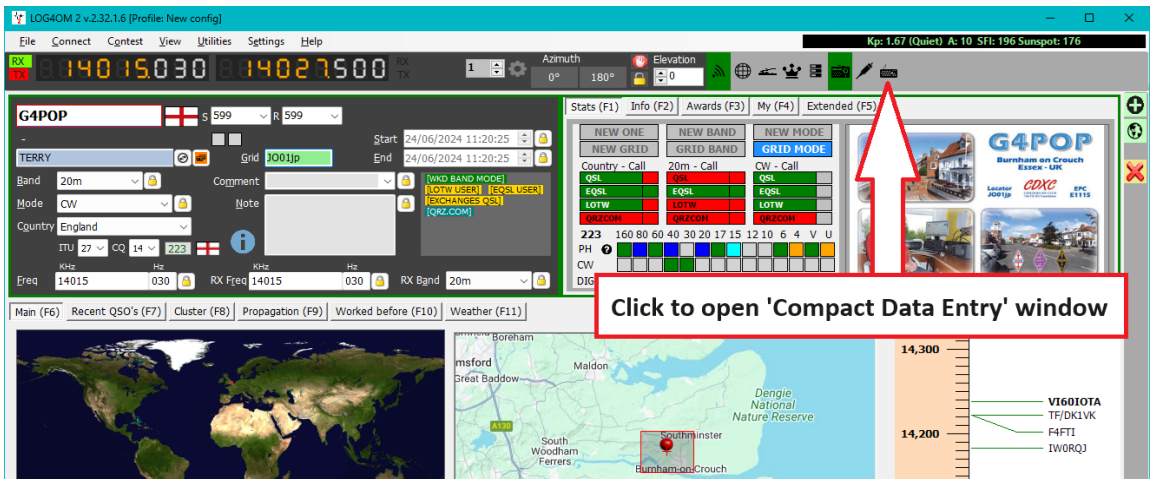
Saving the QSO

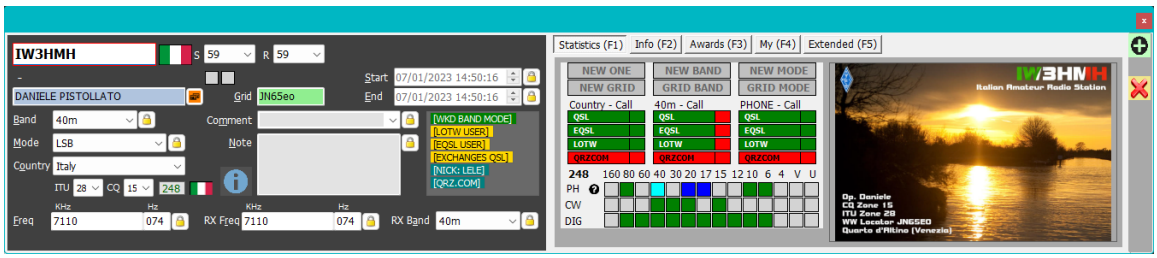
When all information is complete the QSO can be saved by clicking on the Green + (ADD) button or using the keyboard key 'Enter'

Compact Data Entry window

It is possible to select a separate small input display to enable users with restricted screen space to possition the input UI at a different possition on the monitor by selecting 'Data entry' from the 'View' Menu, or by clicking the toolbar icon shown below.

The main window will then be minimised (NOT CLOSED) and the detachable compact data entry display positioned wherever the user requires.

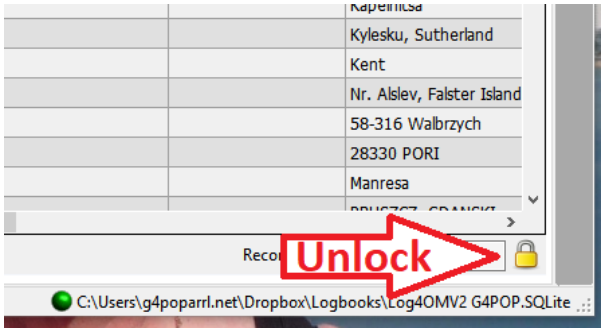




Delete a QSO(s)

QSO's can be deleted from the recent QSO (F7) window by the following actions

1. Click the 'Unlock' padlock icon at the bottom right-hand corner of the window (Icon will go red when unlocked)



2. Select the QSO's to be deleted by using the Windows shift/click or Ctrl/click method

3. Press the keyboard 'Del' button

4. Click the padlock icon again to re-lock to avoid accidental deletion (Icon will revert to yellow when locked)

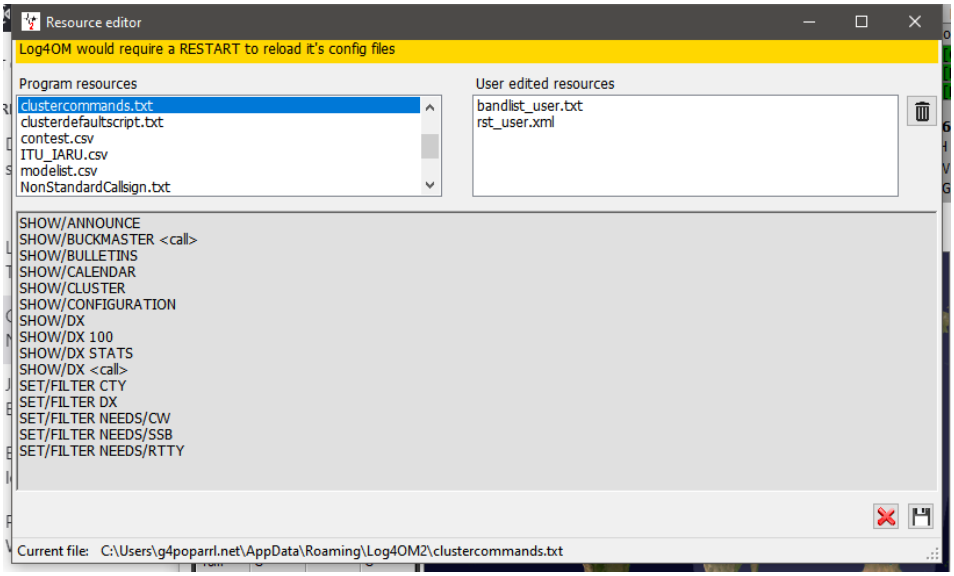
Clearing the data

If the QSO is not to be saved then clicking the X (CLEAR) button or pressing the keyboard key 'ESC'

Resources Editor

The ‘Resources editor (Settings/Resources editor) enables the user to edit the tables/Lists e.g. Bands, Modes, Club lists etc.

1. Double click on the required Program resource
2. Edit the list
3. Click the floppy disc ‘Save’ button in the lower right-hand corner.
4. Restart Log4OM



Keyboard shortcuts.

The keyboard can be used as follows for speedy QSO entry

TAB key - Moves cursor through the main QSO input fields.

Esc Key - Clear data entered in the QSO input fields

Enter Key - To add a QSO

Back slash (\) Key - Press and hold for PTT (PTT KEY is user selectable in Configuration CAT menu)

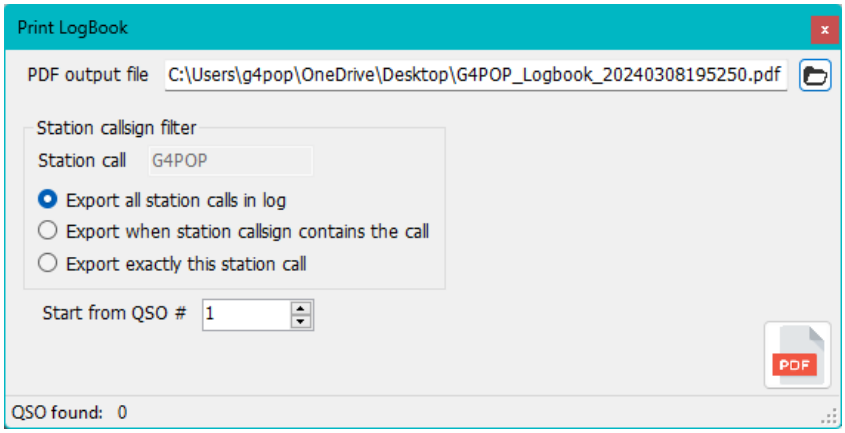
CTRL + PTT KEY – Send a 440Hz tune audio to the default transmit audio card.

Logbook Printing

There are many methods of printing the log database but the simplest is as follows:

1. Utilities/logbook print

2. In the resulting window select a location and provide a file name.



3. Select 'Start from QSO#' enter either no 1 for a complete log print or a QSO record number if the print is for appending to an existing printed log.

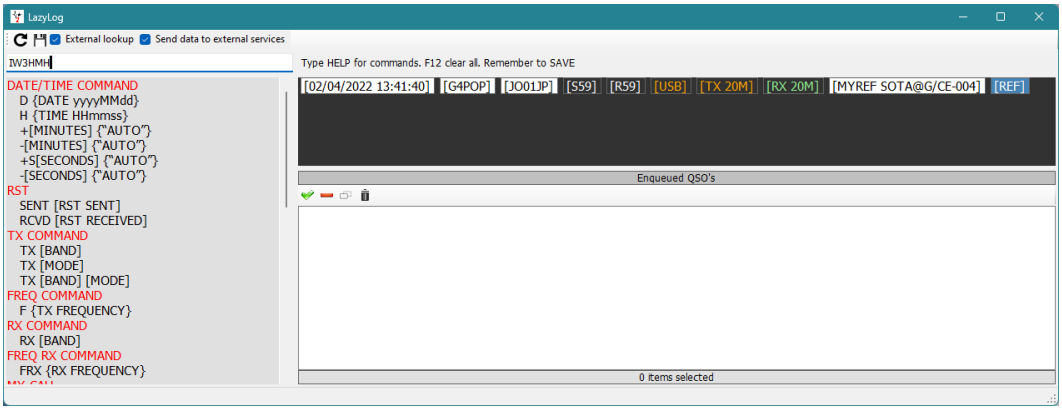
4. Click the PDF logo at bottom right and I see a confirmation that the file was saved.

Lazy Log

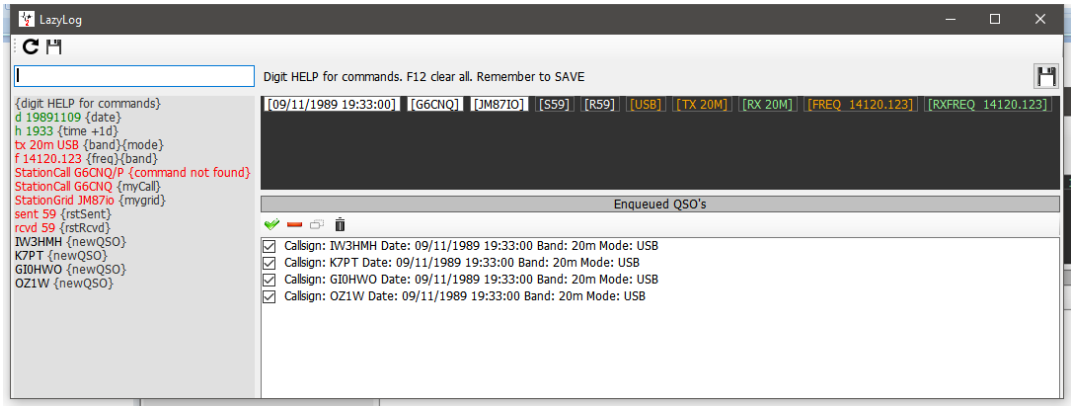
To facilitate rapid entry of QSO's from old paper logs or manually recorded field events Log4OM provides a special QSO entry method whereby the basic fixed data is retained with only call sign to be rapidly input.

Fixed data is items which do not change across many entries: Date, Time, My Grid, Mode, Band, Frequency etc, changing data is call sign contest exchange etc

- Open the Lazy Log from the Utilities/Lazy log menu
- Enter the date (D 20200222) time (h 1933 or H 193345) press the enter/return key on the keyboard
- Add the band mode information (TX 20m USB) press the enter/return key on the keyboard
- Input frequency is required (F 14120.123) press the enter/return key on the keyboard
- Etc Etc Etc

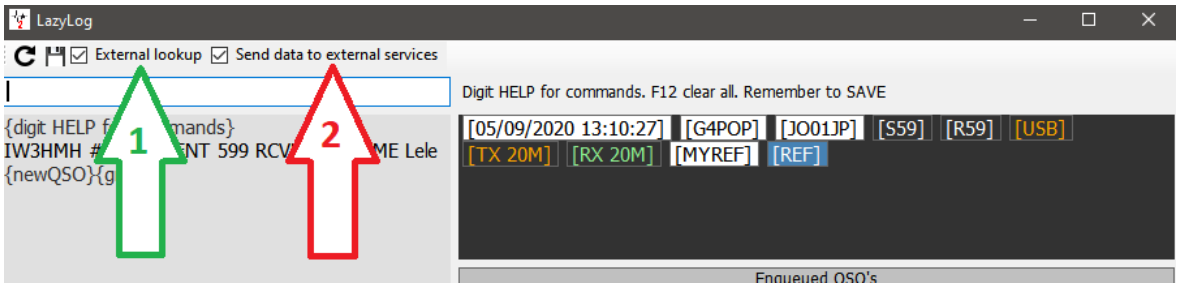


- Once the basic data is input the other stations call sign can be added and when the enter/return key is pressed the QSO will be added to the list (See below)



- The date, time band, mode, frequency, and all data can be changed as applicable for each QSO if required.
- To save the list of QSO's to the logbook click on the save icon at the top right of the window (Floppy disk) or click Ctrl + S
- To clear the entry click Ctrl + R

When the QSO's are added to the logbook the normal update procedures of online lookup's and award reference checks are completed, thus providing a complete data record.



If the check box 'EXTERNAL LOOKUP' (No 1) is checked the call sign will be checked with the on line resources selected in the program config and the fields will be populated with that data as the QSO is saved to the logbook.

If the check box 'SEND DATA TO EXTERNAL SOURCES' (No 2) is checked then the QSO will automatically be uploaded to the external logs selected in the program config. e.g. QRZ, LOTW, EQSL, Clublog Exceptions file etc.

LazyLog Entry commands

Family	Command	Note	Usage
TX COMMAND	**TX [BAND]**	Set the current TX band. This will also align RX Band to the same value	**tx** 20m
	TX [MODE]	Set the current MODE	**tx** USB
	TX [BAND] [MODE]	Set the current BAND and MODE	**tx** 20m USB
FREQ COMMAND	**F {TX FREQUENCY}**	In kHz. If missing, removes the TX frequency. If set, this will also update TX BAND, RX frequency and RX band to the same value.	**f** 14120.10
RX COMMAND	**RX [BAND]**	Set the current RX band	**rx** 20m
FREQ RX COMMAND	**FRX {RX FREQUENCY}**	In kHz. If missing, removes the RX frequency. If set, this will also update RX BAND accordingly.	**frx** 7110
MY CALL	**STATIONCALL [MY CALLSIGN]**	Set the station callsign	**stationCall** IW3HMH
MYREF	**MYREF CLEAR**	Clears station references	**myref clear**

	MYREF [AWARD] [REFERENCE]	Set my station award reference(s). Multiple subsequent references are allowed.	**myref** IOTA EU-131
MY GRID	**STATIONGRID** [MY GRIDSQUARE]	Set the station gridsquare	**stationGrid** JN65eo
CONTACT DETAILS	**NAME** {CONTACT NAME}	The name of the contacted operator/station. If blank clears the name for the current QSO	**name** John Doe
	COUNTY {COUNTY}	The station county. If blank clears the county for the current QSO	**county** MARICOPA
	STATE {STATE}	The station State. This field is checked for valid states on save, according to identified/provided DXCC. If blank, clears the state for the current QSO	**state** AZ
	COMMENT {TEXT}	The QSO comment	**Comment** that's a great guy
REF	**REF CLEAR**	Clears contact references	**ref clear**
	REF [AWARD] [REFERENCE]	Set contact award reference(s). Multiple subsequent references are allowed. Contact references are CLEARED after successful QSO save	**ref** IOTA EU-131
RST	**SENT** [RST SENT]	Set the default RST SENT value	**SENT** 599
	RCVD [RST RECEIVED]	Set the default RST RECEIVED value	**RCVD** 599
CONTEST	**CONTEST** {CONTEST CODE}	Set the CONTEST ID. If blank, disable the contest mode	**contest** ARRL-10
DATE/TIME COMMANDS	**D** {DATE}	Set the QSO date (yyyyMMdd format)	**d** 20200110
	H {TIME}	Set the QSO time (HHmm or HHmmss). If time < actual log time adds +1 day	**h** 1933 **H**193321
	+[MINUTES] {"AUTO"}	Add [MINUTES] to the current date/time. AUTO parameter set automatic increase on each QSO if different timing is not set in the QSO COMMAND row	+5 5 +2 AUTO
	-[MINUTES] {"AUTO"}	Remove [MINUTES] from the current date/time. AUTO parameter set automatic increase on each QSO if different timing is not set in the QSO COMMAND row	-5 -6 AUTO
	+S[SECONDS] {"AUTO"}	Add [SECONDS] to the current date/time. AUTO parameter set automatic increase on each QSO if different timing is not set in the QSO COMMAND row	+S10 S10 S21 AUTO
	-[SECONDS] {"AUTO"}	Remove [SECONDS] from the current date/time. AUTO parameter set automatic increase on each QSO if different timing is not set in the QSO COMMAND row	-S10 -S30 AUTO
QSO COMMANDS	{DATE/TIME COMMAND} [CALLSIGN] #{GRIDSQUARE} {SENT [RST SENT]} {RCVD [RST RECEIVED]} {CS [CONTEST SENT]} {CR [CONTEST RECEIVED]}	At the carriage return the system will save the QSO into the temporary list of QSO's SENT command can be replaced by > RCVD command can be replaced by <	G4POP **RCVD** 599 **+5s** IW3HLI **#**JN65ER **SENT**599 **RCVD**555 G4POP <599

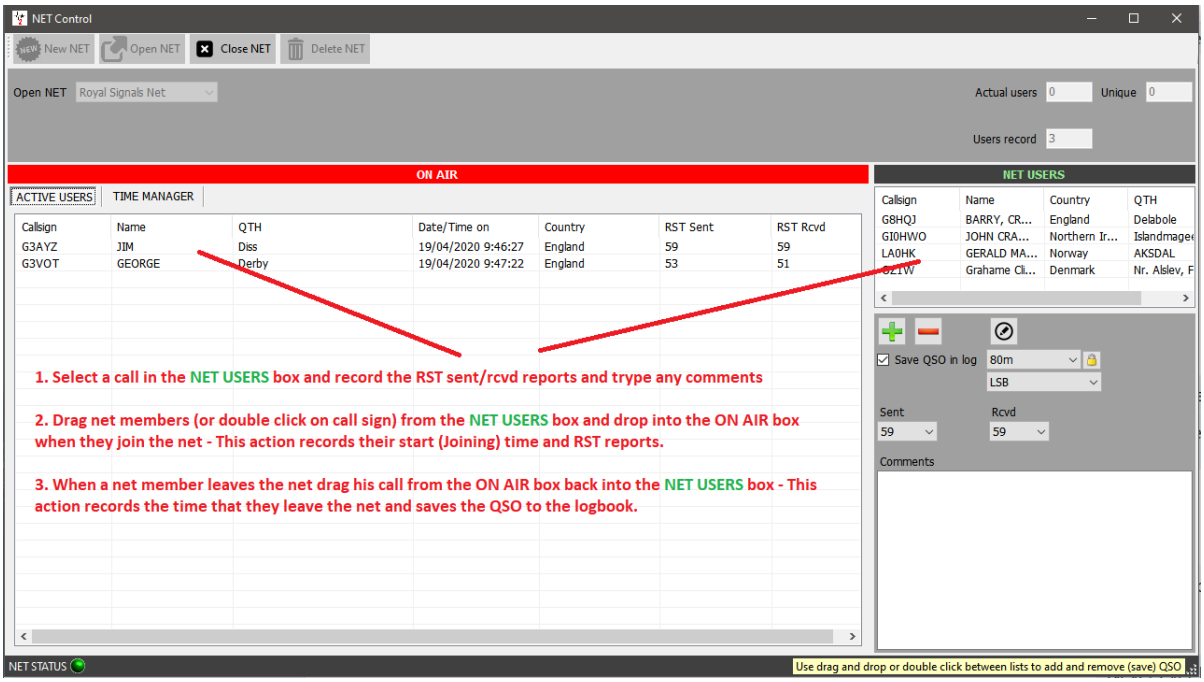
[MANDATORY PARAMETER] {OPTIONAL PARAMETER}

Save entries – Ctrl + S

Clear entries – Ctrl + R

Net Control

A sophisticated net control facility is accessible via the 'Utilities' menu which provides a simple way of participating or managing group QSO's (Nets)



The Net Control window simulates an air traffic controller's movement board and provides a drag and drop facility for members joining or leaving the net.

The time when the member joins the net is recorded as the QSO start time for that net member. This time commences when the call sign of an inactive member is dragged from the 'NET USERS' pane into the 'On Air' pane.

Likewise, when a member leaves the net his call sign is dragged out of the 'On Air' pane into the 'NET USERS' pane. This action will record the end time for the QSO with that member. A lookup of either QRZ or HamQTH is carried out as the QSO is added to the log and any missing details are updated.

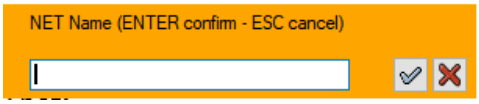
Adding nets

Nets can be added or deleted by using the buttons indicated in the graphic below.

To view an existing net, select from the names in the drop-down menu in the 'Open net' field near the top of the screen.

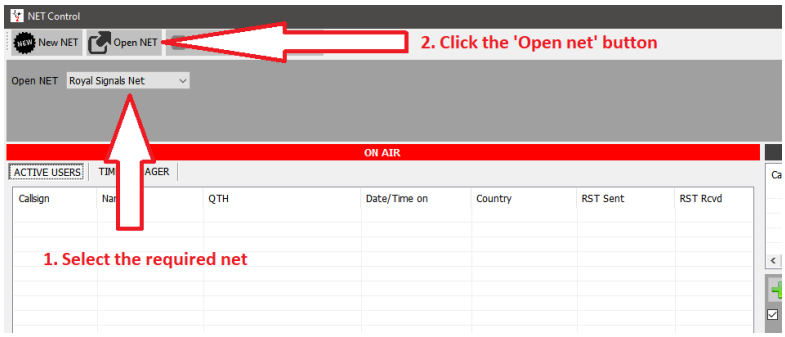
To create a new net:

1. Click the 'New Net' button and enter a name in the 'Net Name" dialog



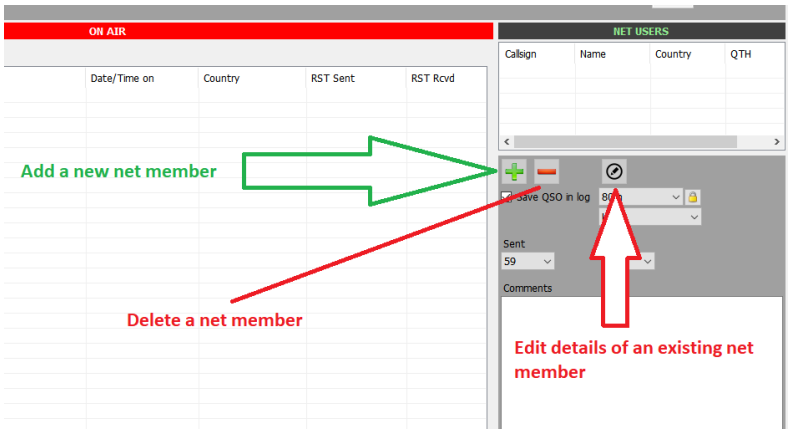
2. Click the check mark icon to add the new net or press enter (To abort the action press Esc or click the red cross X)

Opening a net



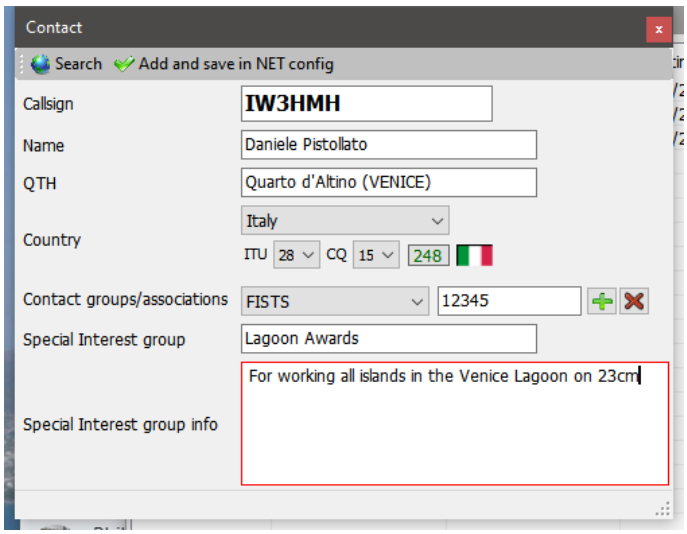
Adding or editing a net member

1. To add a net member, click on the green cross
2. To delete a member, click on the red minus (-) sign
3. To edit a member's details, click on the pen icon



In the 'Call sign Management' screen, insert any details required and click on the green check mark at the top of the window marked 'Add and save in NET config'

Details can also be added to the call signs of 'Inactive members' (listed on right of screen) To do this, highlight a call sign then click on the icon for editing (a pen in a circle to the right of the minus/delete button) Insert new details and click on the green check mark at the top of the window marked 'Add and save in NET config'

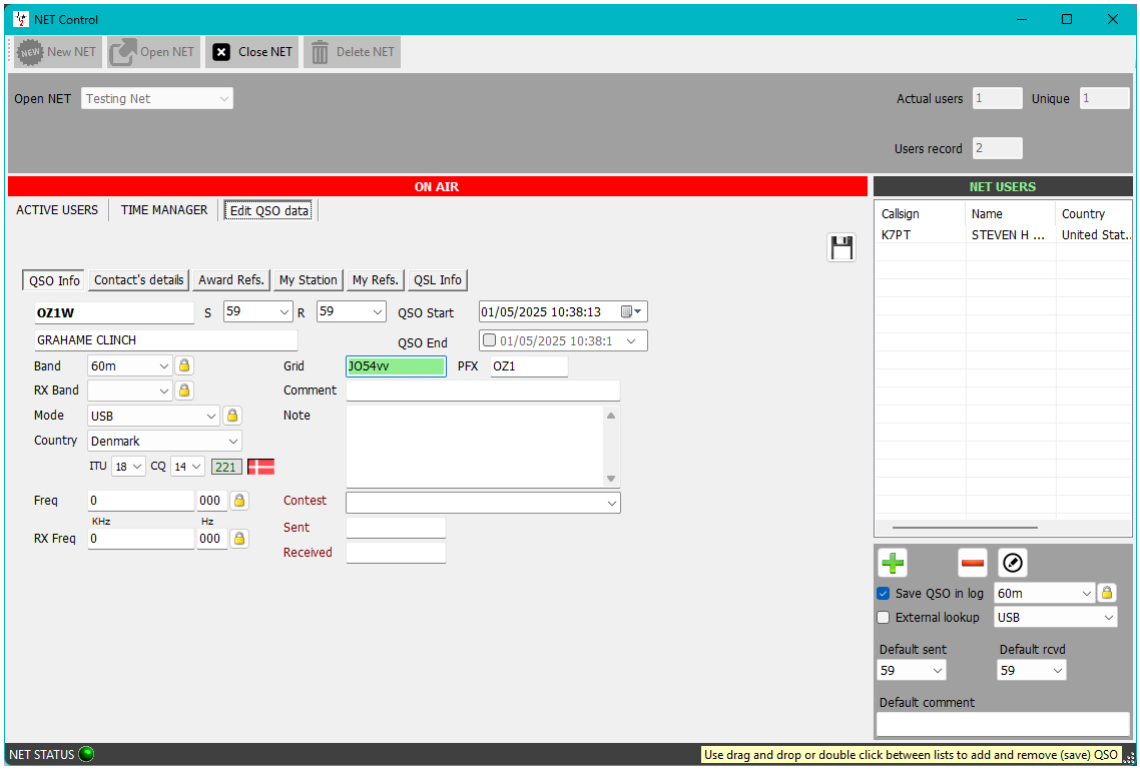


Clicking on the 'SEARCH' icon will cause a lookup of that call sign using the online sources selected in the program config, the various fields will be auto filled.

Clicking on the Green check mark icon (Add & save in NET config) will store the updated or new contact to the Net control database for future use.

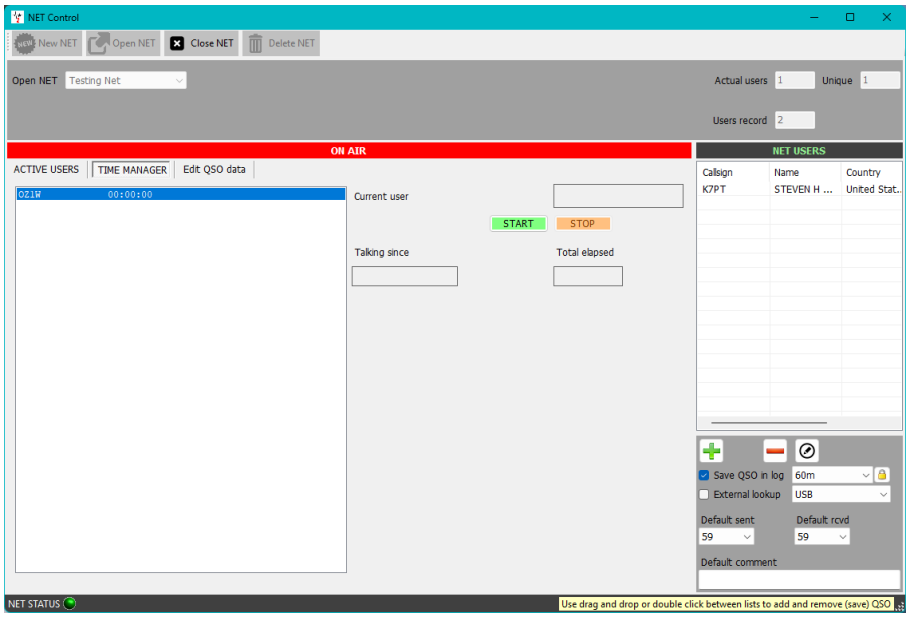
Editing 'Active' net members information

Highlighting an active member and selecting the 'Edit QSO data' tab allows the user to update virtually all of the information about that contact for both the active net member and the user of net control



Net Time manager

Some club nets need to monitor the amount of time a net member is speaking on each over! For this purpose, Log4OM provides a 'Time Manager' click on the Time Manager tab in the 'ON AIR' box.



Double clicking on a call sign transfers it to the 'Current user' field and start the timer, when the person finishes his/her over click the 'Stop' button to stop the clock and save the time alongside the users call sign in the left box.

Closing a net

Click the 'Close net' button, if some net members call signs remain in the 'ON AIR' box the user is prompted to save the QSO's or ignore and close.

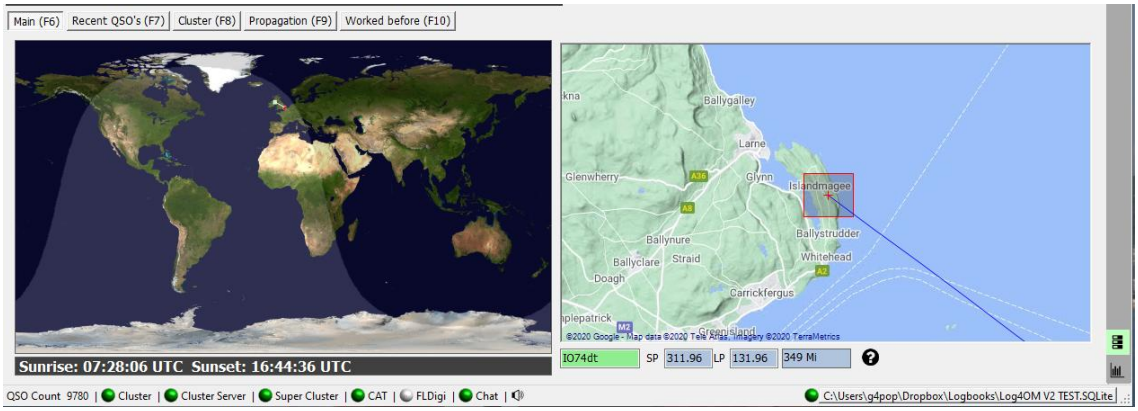
Map types

Main UI Map

There are two map in the main user interface:

That on the left is a real time grey line map that also plots the Short and long path Azimuth lines, the map style can be changed in the Settings/Program configuration/Map menu.

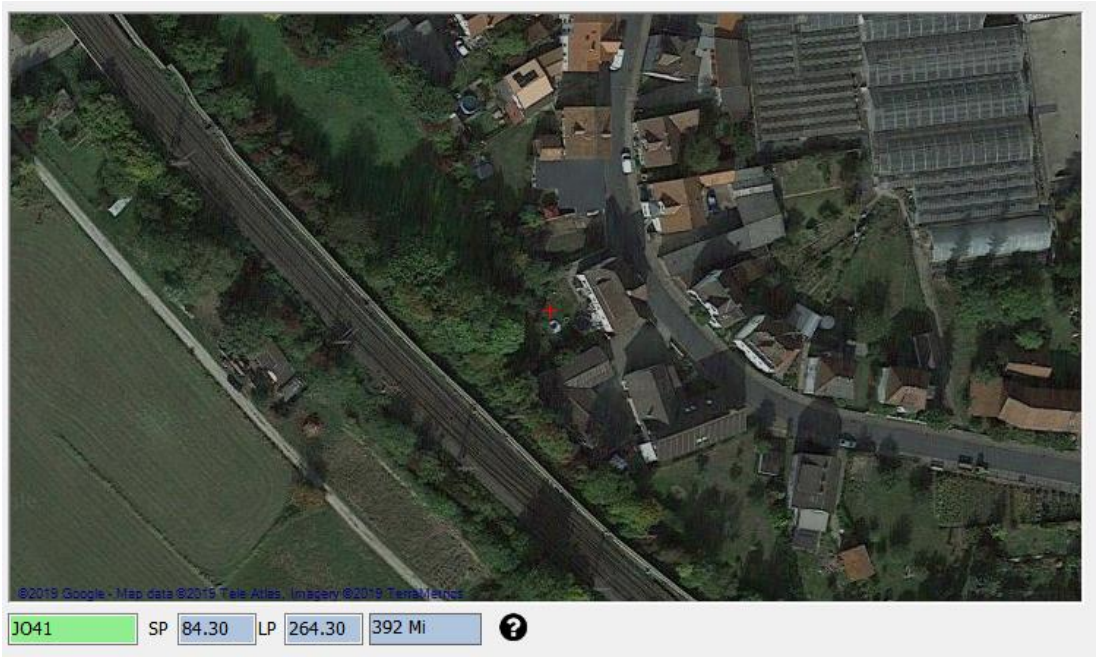
On the right is a Google map display of the location of the other station entered in the call sign input field and is based on the locator found in the call sign lookup or if no locator is found the approximate centre of the country.



The lower edge of the large scale Google map displays the Locator, Short and long paths and distance.

The right hand map can be zoomed using the mouse scroll wheel and by holding the right mouse button pressed the map can be repositioned/dragged.

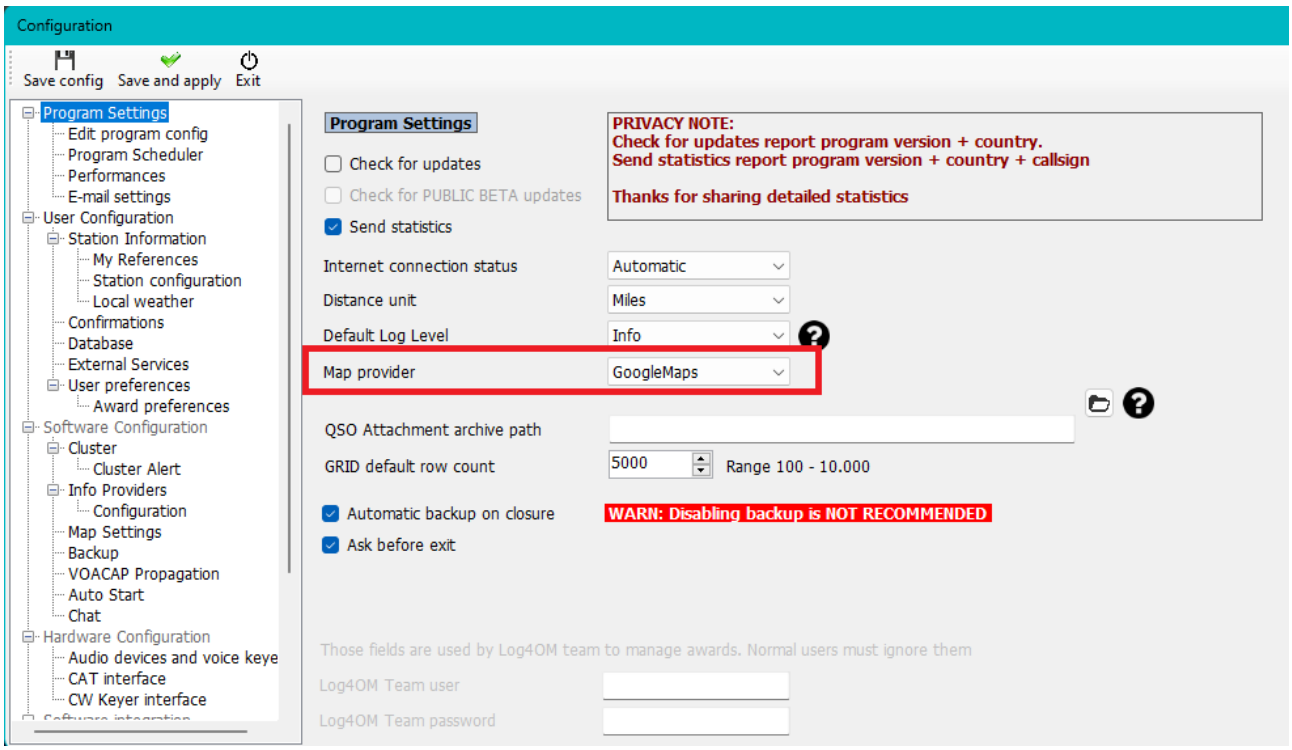
The Google map on the right can be zoomed into street level view.



Local map choice

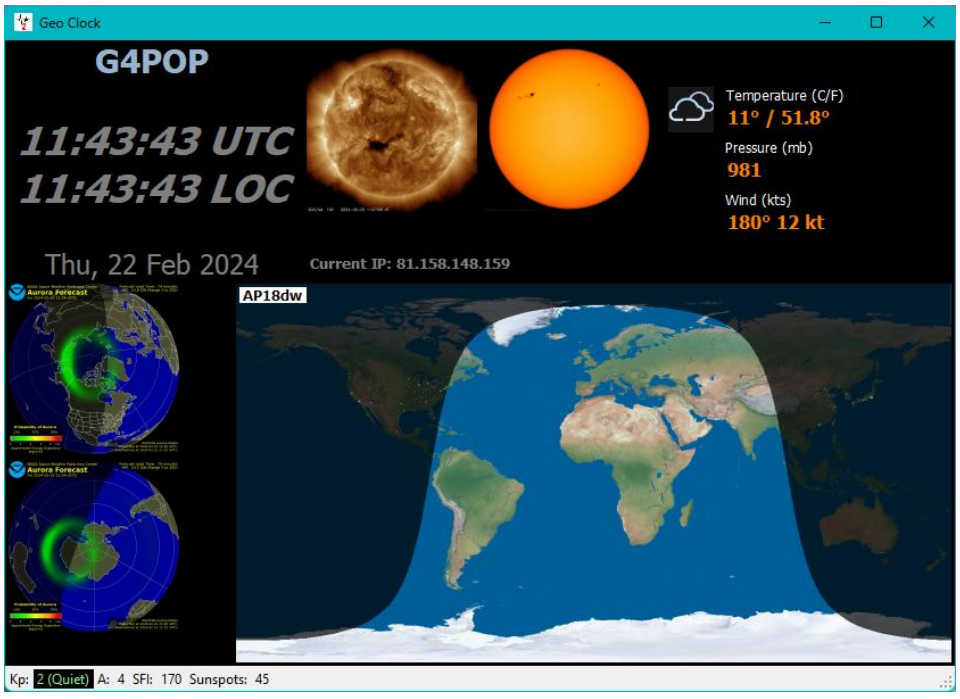
The user can select either Google Maps, Bing or Street Maps from the Settings/Program configuration/program settings menu as shown below.

NOTE: Having clicked save and apply it is necessary to restart Log4OM for the changes to take effect



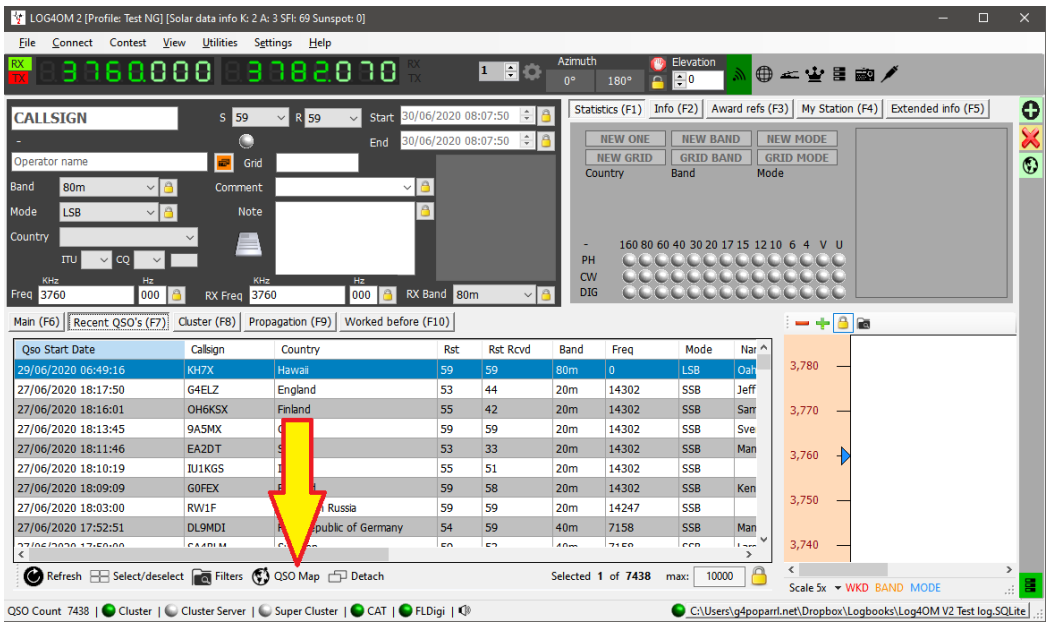
World Clock and Map

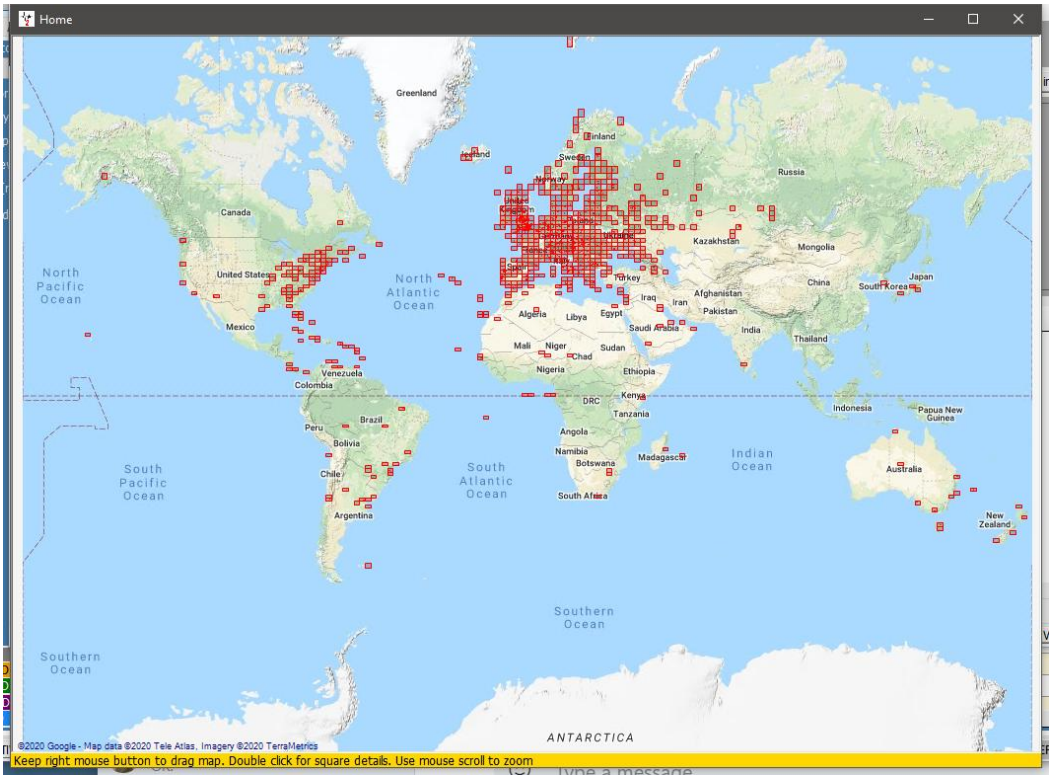
This floating world clock/map provides instant information about local weather, propogation, time and grey line, to access it use view/World Clock

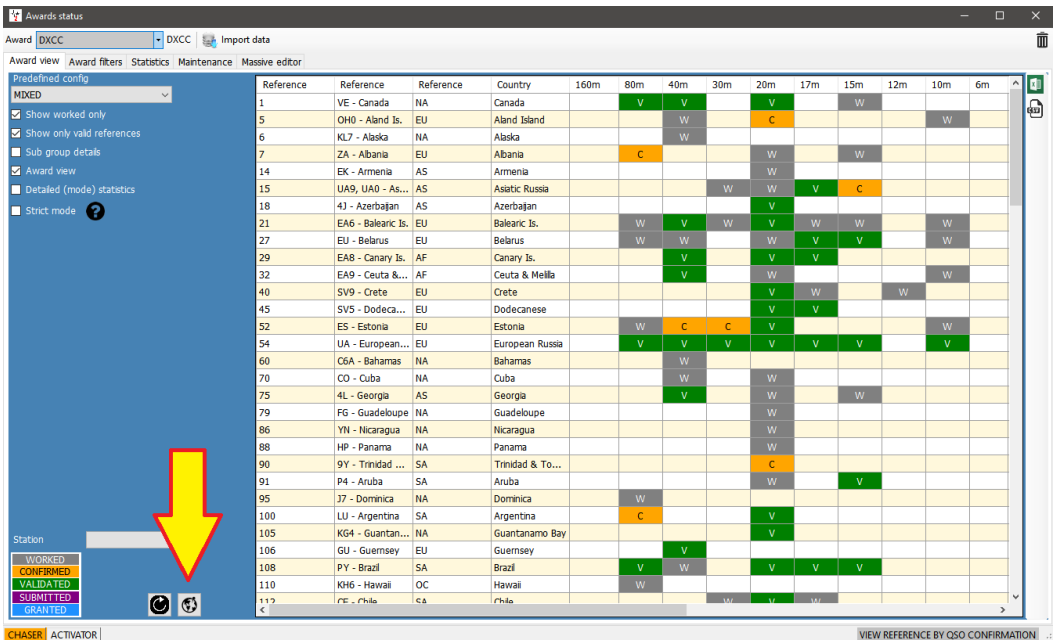


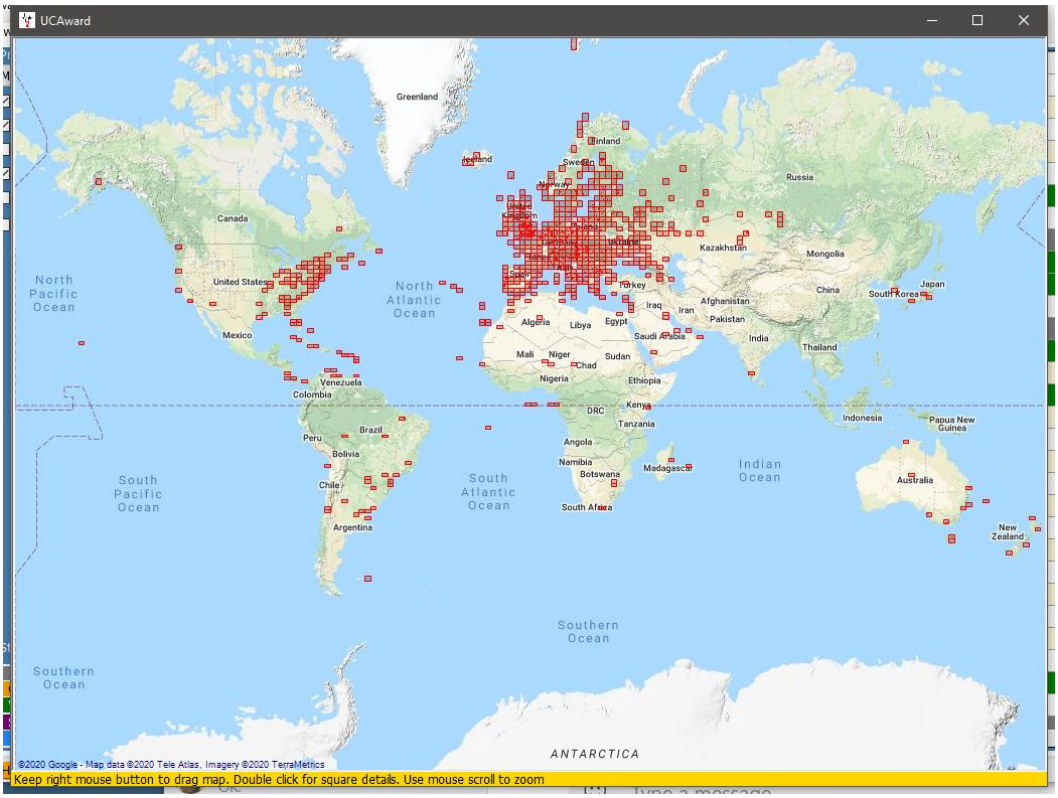
QSO Maps

Most grids have a QSO Map icon on the bottom toolbar, clicking this icon will display a map of QSO Grid square locators and if filters have been applied the display will reflect the filtered results.

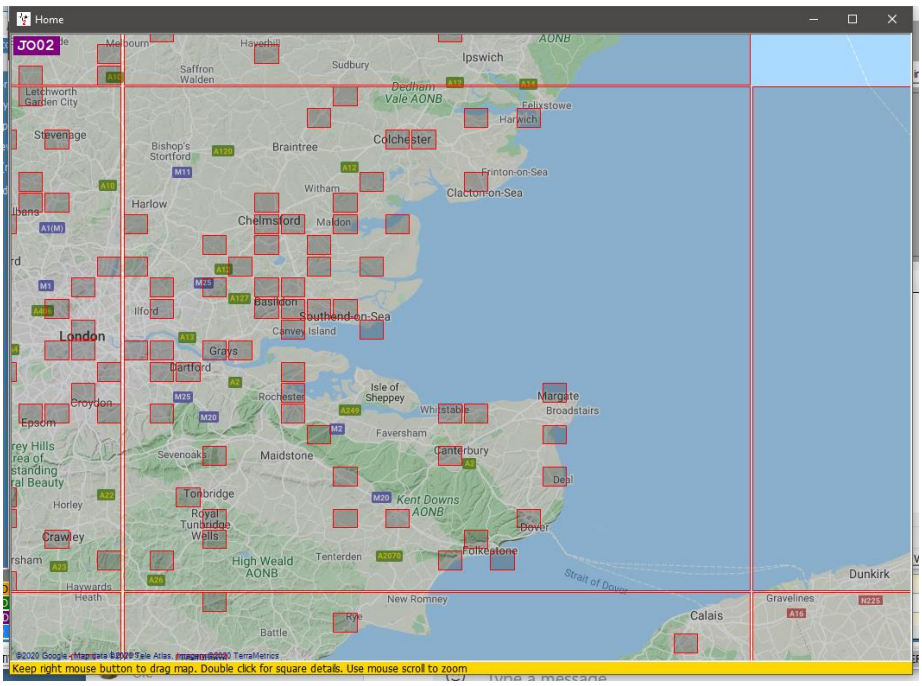

LOG4OM 2 [Profile: Test NG] [Solar data info K: 2 A: 3 SFI: 69 Sunspot: 0]
File Connect Contest View Utilities Settings Help
3760.000
3782.070
CALLSIGN
Operator name
Band 80m
Mode LSB
Country
Freq 3760
RX Freq 3760
RX Band 80m
Statistics (F1) Info (F2) Award refs (F3) My Station (F4) Extended info (F5)
NEW ONE NEW BAND NEW MODE
NEW GRID GRID BAND GRID MODE
Country Band Mode
Main (F6) Recent QSO's (F7) Cluster (F8) Propagation (F9) Worked before (F10)
Qso Start Date Callsign Country Rst Rst Rcvd Band Freq Mode
29/06/2020 06:49:16 KH7X Hawaii 59 59 80m 0 LSB
27/06/2020 18:17:50 G4ELZ England 53 44 20m 14302 SSB
27/06/2020 18:16:01 OH6KSX Finland 55 42 20m 14302 SSB
27/06/2020 18:13:45 9A5MX 59 59 20m 14302 SSB
27/06/2020 18:11:46 EA2DT 53 33 20m 14302 SSB
27/06/2020 18:10:19 IU1KGS 55 51 20m 14302 SSB
27/06/2020 18:09:09 G0FEX 59 58 20m 14302 SSB
27/06/2020 18:03:00 RW1F Russia 59 59 20m 14247 SSB
27/06/2020 17:52:51 DL9MDI 54 59 40m 7158 SSB
Refresh Select/deselect Filters QSO Map Detach
Selected 1 of 7438 max: 10000
3,780
3,770
3,760
3,750
3,740
Scale 5x WKD BAND MODE
QSO Count 7438 | Cluster | Cluster Server | Super Cluster | CAT | FLDigi |
C:\Users\g4poparrl.net\Dropbox\Logbooks\Log4OM V2 Test log.SQLite


Home
Greenland
Canada
United States
Mexico
Russia
Kazakhstan
Mongolia
China
South Korea
Japan
Afghanistan
Pakistan
India
Thailand
Indonesia
Papua New Guinea
Australia
New Zealand
Venezuela
Colombia
Peru
Brazil
Bolivia
Chile
Argentina
Nigeria
Mali
Niger
Chad
Sudan
Ethiopia
Kenya
DRC
Tanzania
Angola
Namibia
Botswana
Madagascar
South Africa
North Pacific Ocean
North Atlantic Ocean
South Pacific Ocean
South Atlantic Ocean
Indian Ocean
Southern Ocean
ANTARCTICA
©2020 Google - Map data ©2020 Tele Atlas, Imagery ©2020 TerraMetrics
Keep right mouse button to drag map. Double click for square details. Use mouse scroll to zoom

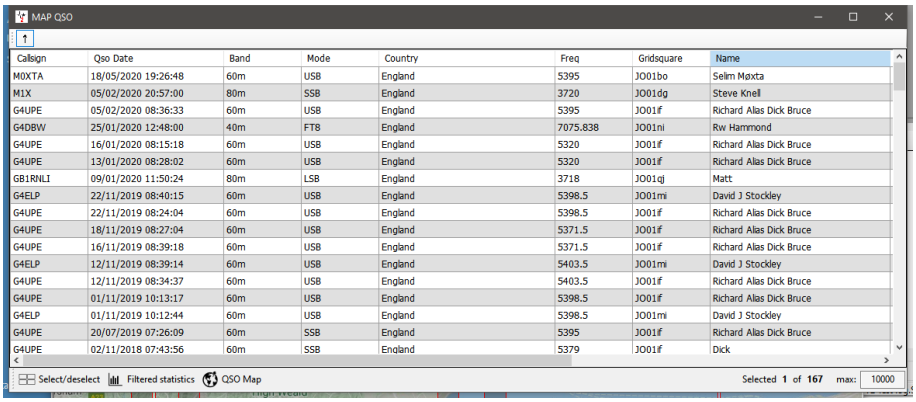




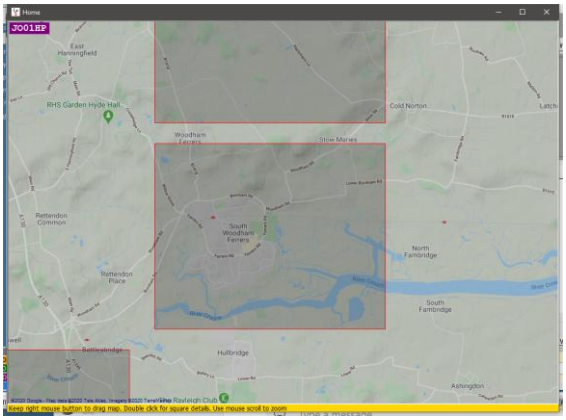
Scrolling the mouse wheel will zoom the map in and out and right click and drag will move the map.



Double left clicking on a square will display a list of QSO's related to that grid square.

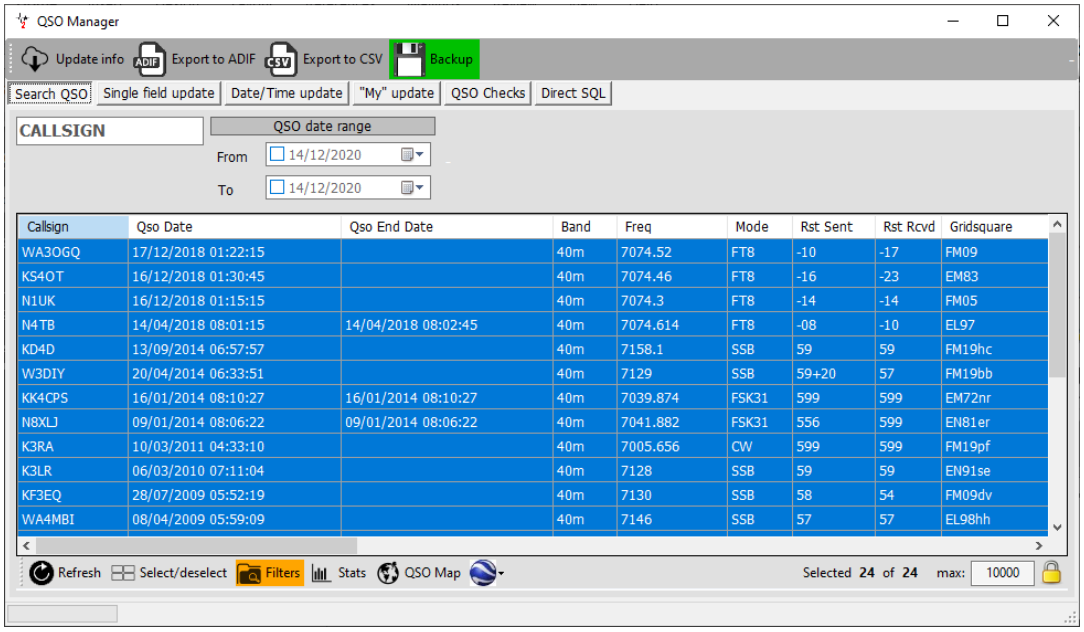


Zooming in and double left clicking a 6-digit square will display the QSO's related to that 6 digit square

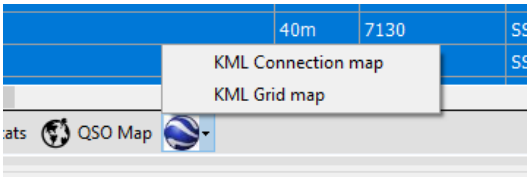


Google Earth & kml files

Google Earth kml files may be created and displayed in Google earth from various grids either filtered or unfiltered, providing the QSO's contain a grid square, and is available by clicking on the GE Icon at the bottom of each grid.

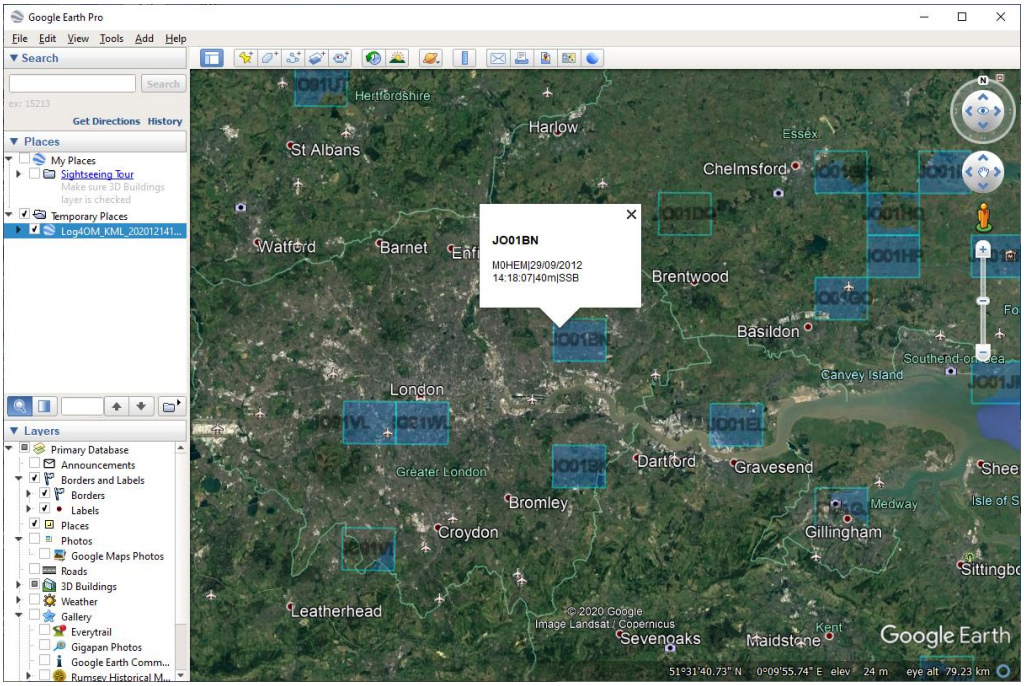


QSO manager filtered by DXCC 291 (USA) and Band = 40M ready to generate GE Map by clicking the icon



Select the required map type

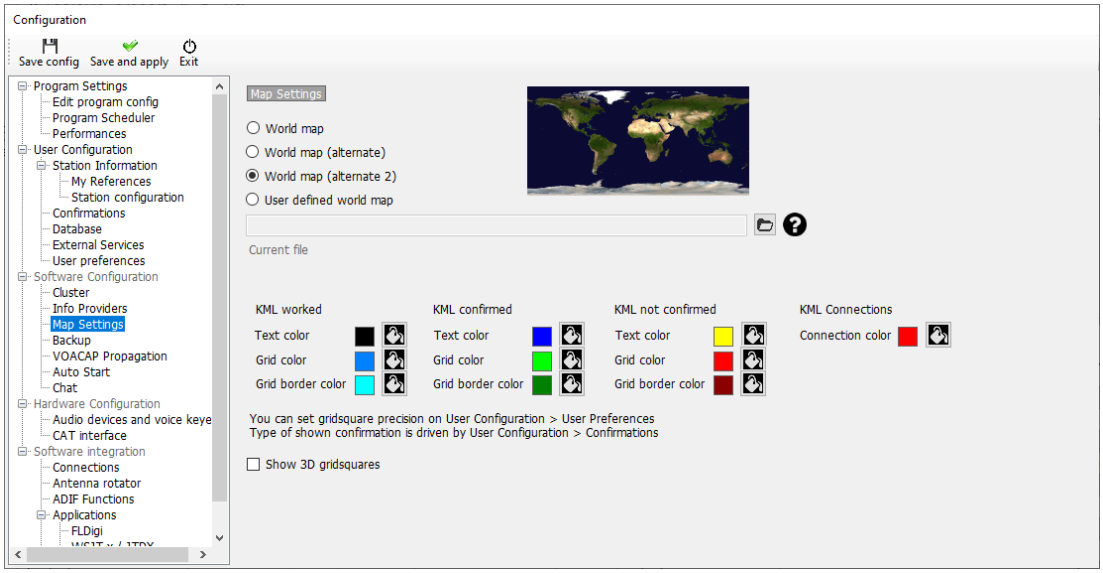
Save the fie to a convenient location and GE opens to display results

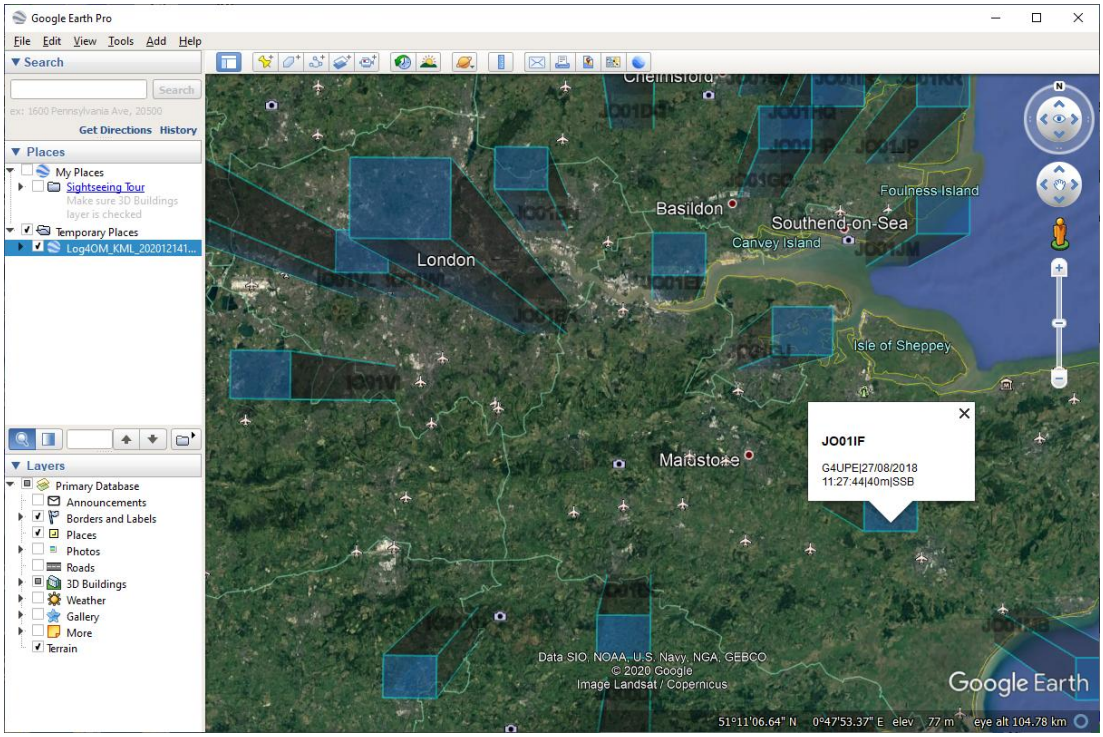


Clicking on a square displays the QSO's for that square

Google Earth KML map colours

In Settings/Program configuration/Map settings it is possible to configure the colours displayed and select 2D or 3D display.

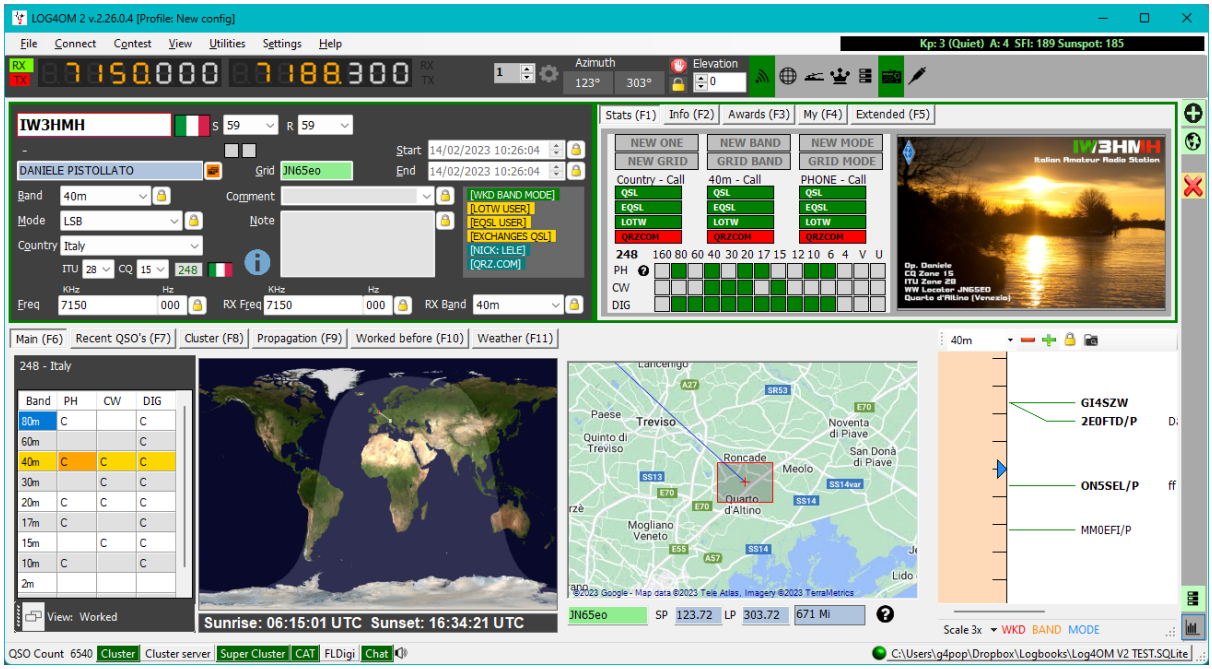




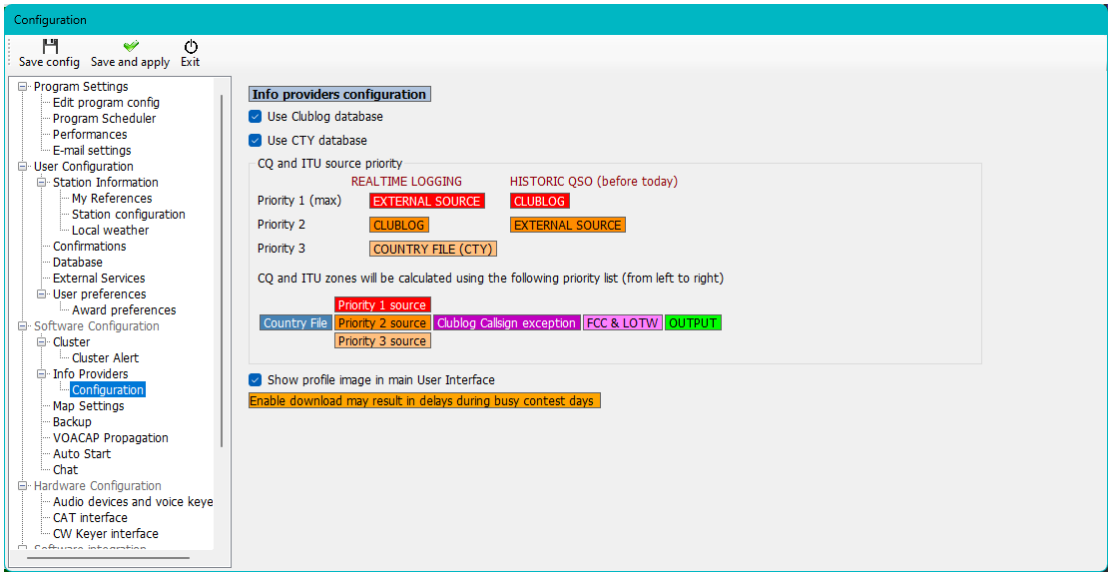
How lookup works

Call signs can be entered in the Input window below by three methods.

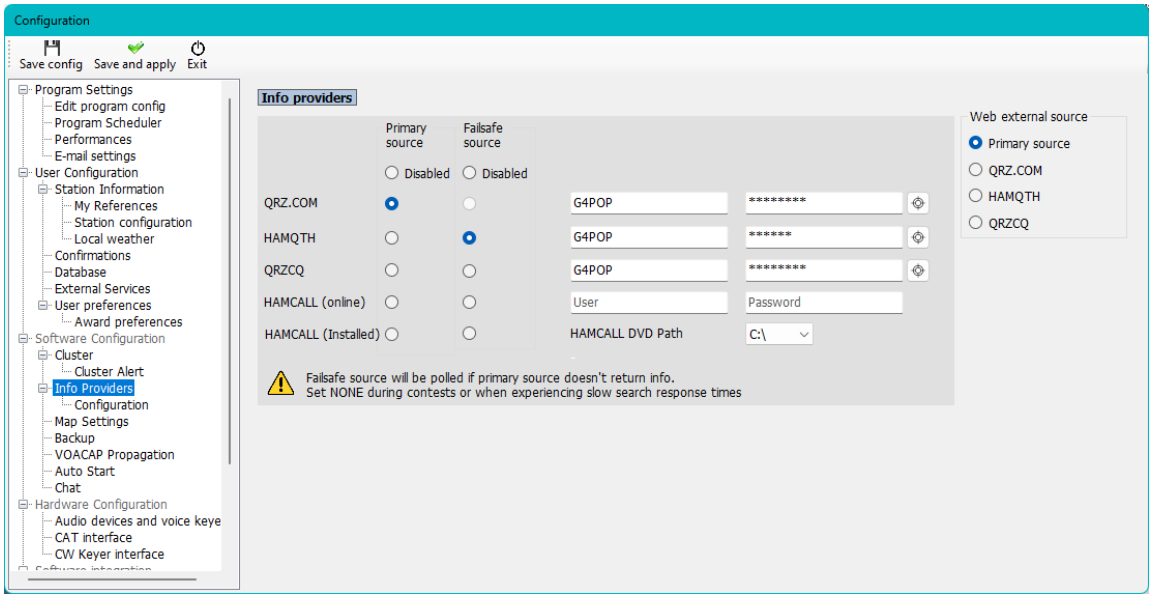
1. Manual Entry
2. Single click on a cluster or Bandplan spot
3. Received via UDP from and external program like WSJT, JTDX, Gridtracker etc



The call sign is then ‘Looked up’ using the methods and in the ‘Priority’ order set by the user in the program configuration menu below:



The 'External Source' having already been selected in the 'Program configuration' menu below.



In the examples above Log4OM checks

1st The external source of QRZ.com and if no information is available there HamQTH

2nd The Clublog database which contains specific dates and times when the call sign is/was operative.

NOTE: If the lookup is for Bouvet Island and clublog identifies that the station was only on air for 4 days in February 2023 and its grid reference was WXYZ then that information overrides anything else found by other sources and the QSO can only be logged if the QSO date is within the 4 days of activity.

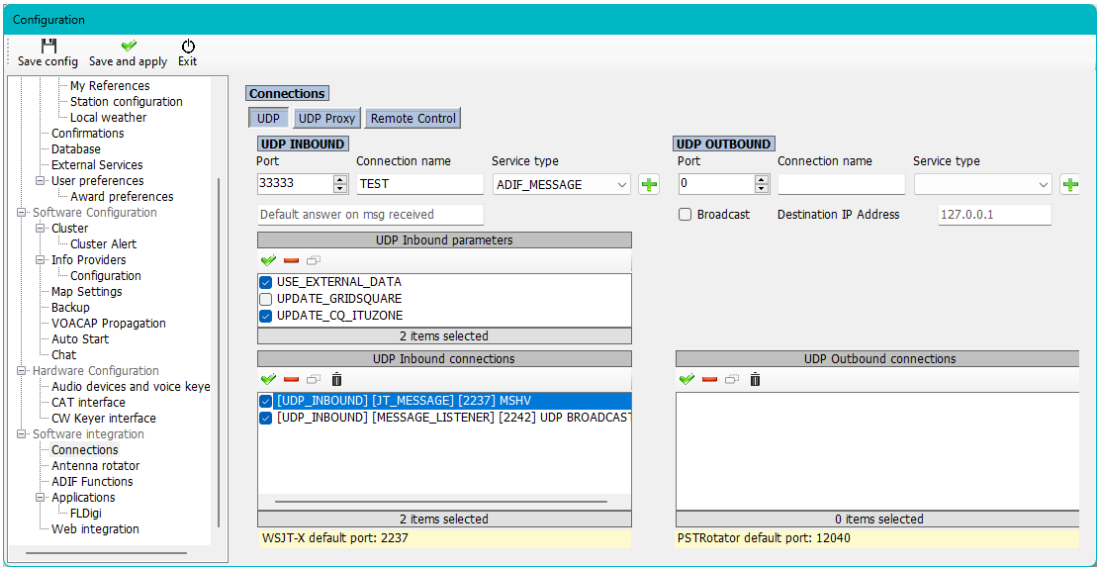
3rd The CTY file which is very basic information for any data not available from the first two checks above.

Clearly if the priority is changed by the user a very different result is obtained e.g.

PLEASE NOTE

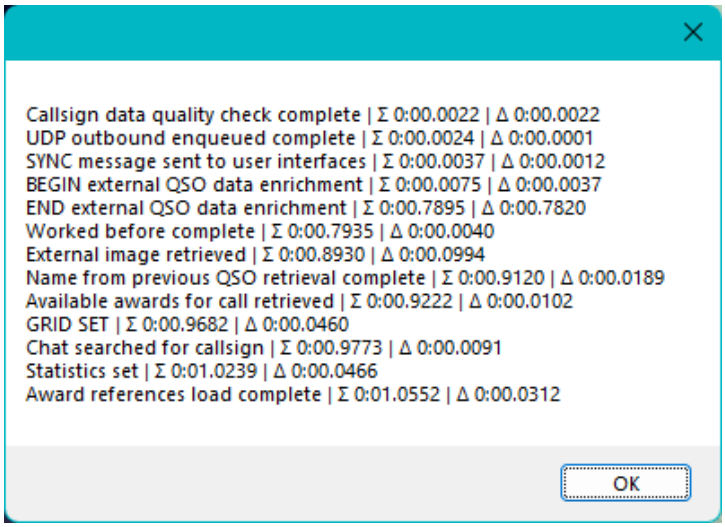
When a QSO is in progress in an external program like WSJT etc the Log4OM lookup is only displayed it is not what is saved when the QSO is completed by the WSJT software sending the QSO via UDP

UNLESS the user elects to update the data received in the QSO sent from the external program in the Program Configuration menu shown below:



Speed of lookup

As of version 2.26.0.05 a lookup performance enhancement was added to enable the user or support team to identify where delays are caused



Call sign Look up processes

When a call sign is entered in the Call sign input filed of Log4OM information is simultaneously collated from many different resources to provide the most accurate information currently available. e.g. On-line call lookup services like QRZ, HamQTH, HamCall, QRZCQ, Clublog Exceptions file, Log4OM databases, QSL manager lists, LOTW user lists and CTY data for zone information.

The lookup is handled differently for QSO's that are being imported via an ADIF file 'Historic data' to that of a Call sign being entered during the process of making a contact (New QSO) which is considered to be ‘Real time' data.

'Historic data' from imported QSO's may often be an entirely different set of information to the same call sign currently in use, there are many reasons for this as in the examples below:

- Call sign holder moved QTH
- Call sign was re-issued to a new licensee
- The IARU changed the zoning of the country/QTH
- The call is no longer in use
- The DXCC country prefix was changed

Resources

Information Providers.

In the quest for accuracy of data when recording and updating QSO's Log4OM Version 2 collates information from both external information providers and information maintained by the Log4OM team.

External sources

- Solar data from NOAA and VOACAP (Alex VE3NEA)
- CTY Data from Jim Reisert AD1C
- Clublog data from Clublog.org
- Call sign exceptions from Clublog.org
- HRDLog online
- LOTW Users from ARRL/LOTW
- IOTA data from RSGB/IOTA
- SOTA Summit information from SOTA
- Online call lookups from QRZ, HamQTH, QRZCQ & HamCall

Data maintained by the Log4OM Team

- Awards definitions
- Country file
- SOTA Associations list
- Band/Mode files
- All files released through application releases

User selection of info providers

Log4OM utilises two different ways of using the external sources as data sources, because some sources work in real-time, so these work only on "current" QSO lookup, while other sources are able to recover data from the past (historic)

The default REALTIME LOGGING lookup priority for CQ and ITU zones is:

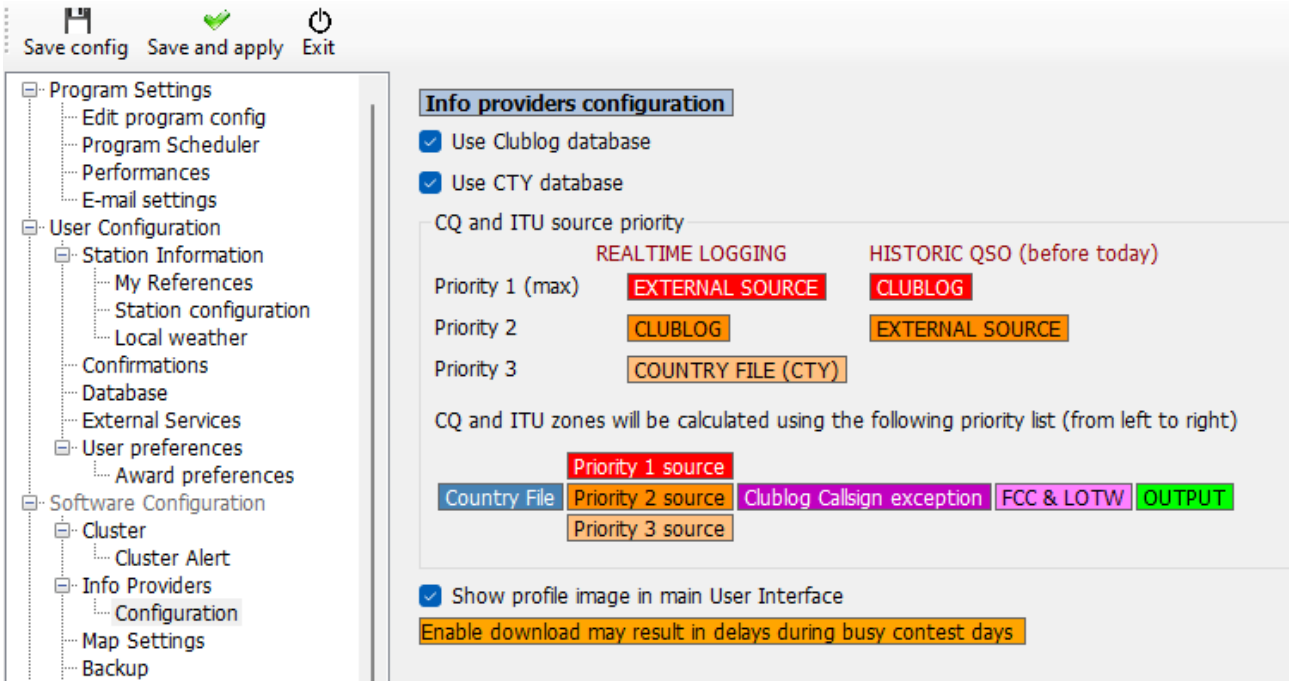
1. External Source (QRZ, Hamqth etc)
2. Clublog Exceptions file
3. CTY Fike

If the CTY has a valid CQ/ITU zone for the call sign being looked up, this will be the source selected. The CTY file is designed to be used for real time contesting.

Due to the limitation above Log4OM provides two different methods for call look up, one for "Realtime " logging and another for "historic" QSO logging (Historic is any QSO entered where QSO date is different to today's date)

Historic QSO lookup by default is Clublog and Exceptions file first, followed by 'External Sources' (QRZ/HAMQTH etc.). This is because if a QSO that is 10 years old is entered the best source for historic data is Clublog and then any

external source.



Log4OM downloads the entire Clublog Call exceptions (Clublog Call Exc.) and prefix lookup database. One of the driving reasons for Club Log's existence is to increasing logging accuracy and this database used in conjunction with other data collated by Log4OM ensures the best call/prefix accuracy available in any logging software.

Updating data resources

The lookup process accuracy relies on the data that is used being current and Log4OM V2 ensures that the reference resources are updated automatically at regular intervals.

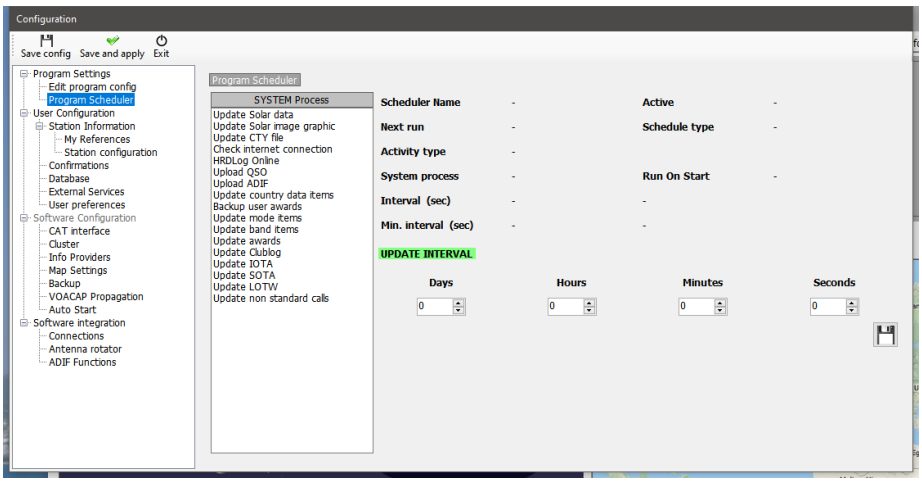
The following files are automatically downloaded at scheduled intervals.

- Solar data
- CTY Data
- Clublog Exceptions file data
- LOTW user's data
- Country Data
- Mode and band data
- Awards definitions
- IOTA Database
- SOTA Summit lists & SOTA Associations table

Manual update of those database resources is also available from the settings menu (Settings/Update resources)

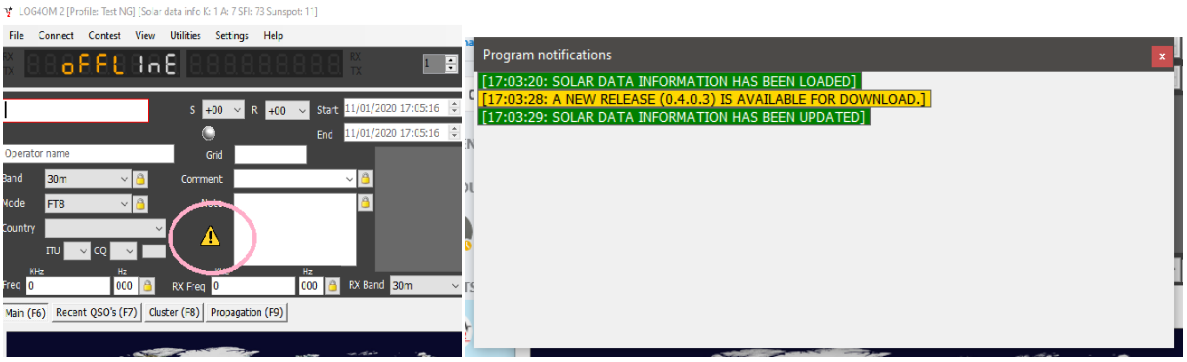
Scheduling Data Updates

In the Settings/ Program Configuration/Program Scheduler it is possible to control how often these data sources are updated by selecting the data source from the list and changing the update frequency by days, minutes, hours and seconds, followed by clicking the save icon then Save and apply. We recommend to keep the default values, as they're calculated to have the best efficiency without overloading external data providers. SPOT updates are always available to manage exceptional situations.



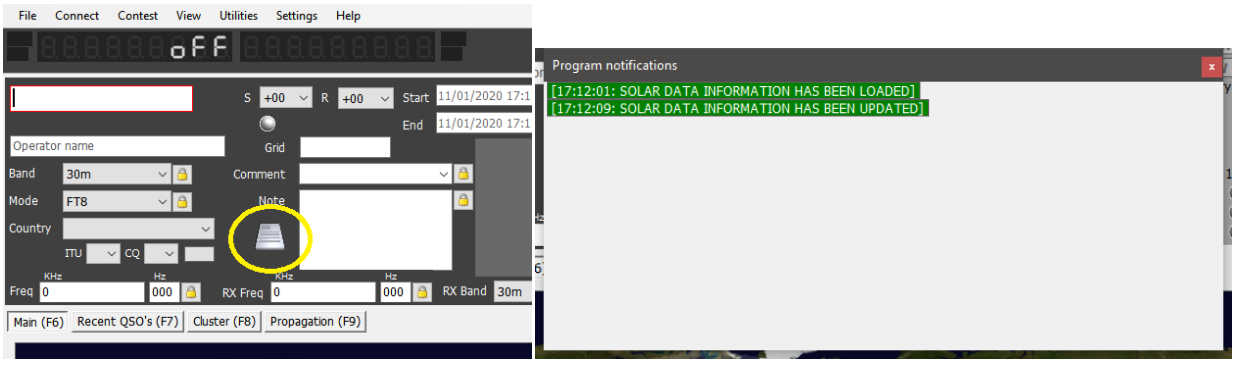
Update Notifications

When Log4OM initially starts it updates data the files as mentioned earlier and notifies the user of such updates with an icon in the main UI, the icon also informs of any program updates



Left clicking on the icon will display the message window listing the updated files and also availability of a program update as above, right clicking the icon will clear it.

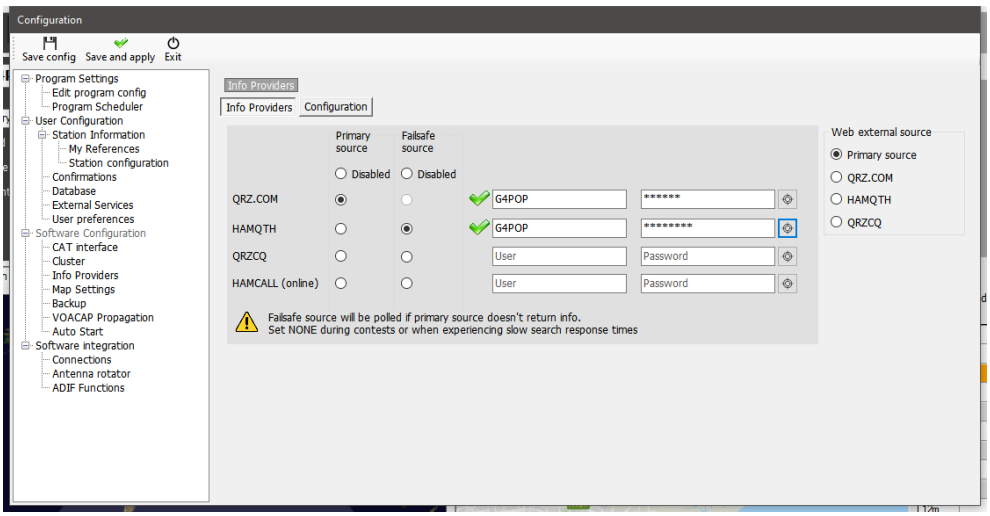
If no program updates are available, then the icon shown below indicates that only data updates were found.



Info (Service) Providers

The user can select the online call lookup service to be the primary source and a choice of a failsafe or backup lookup service in the event of the primary source not being available or not providing information about the call sign being looked up.

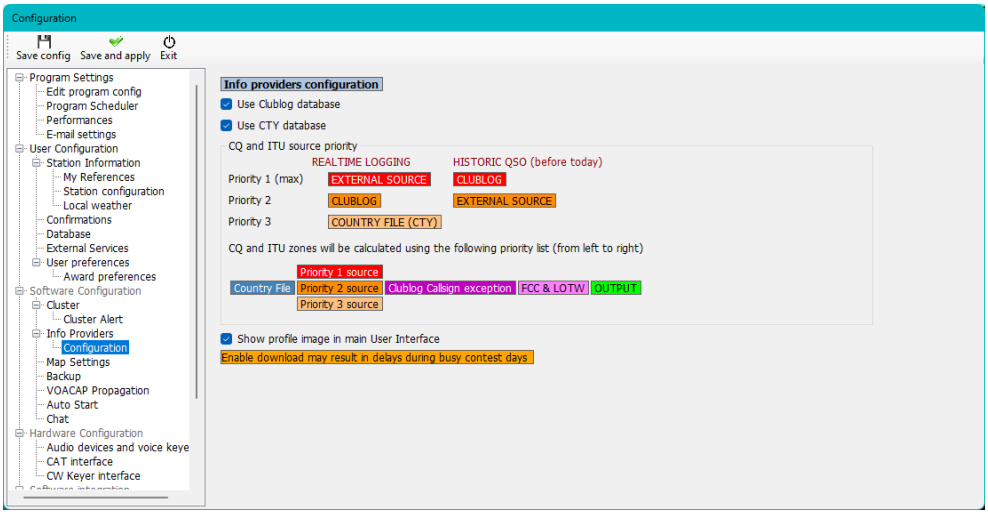
The user must first add the username and password for each source. Clicking the button directly to the right of each password field tests the lookup service is being correctly accessed, if it is working correctly a green check mark appears to the left of the user name field.



The user can also select which source is used when the external browser is opened by using the menu choices to the right.

Source priorities.

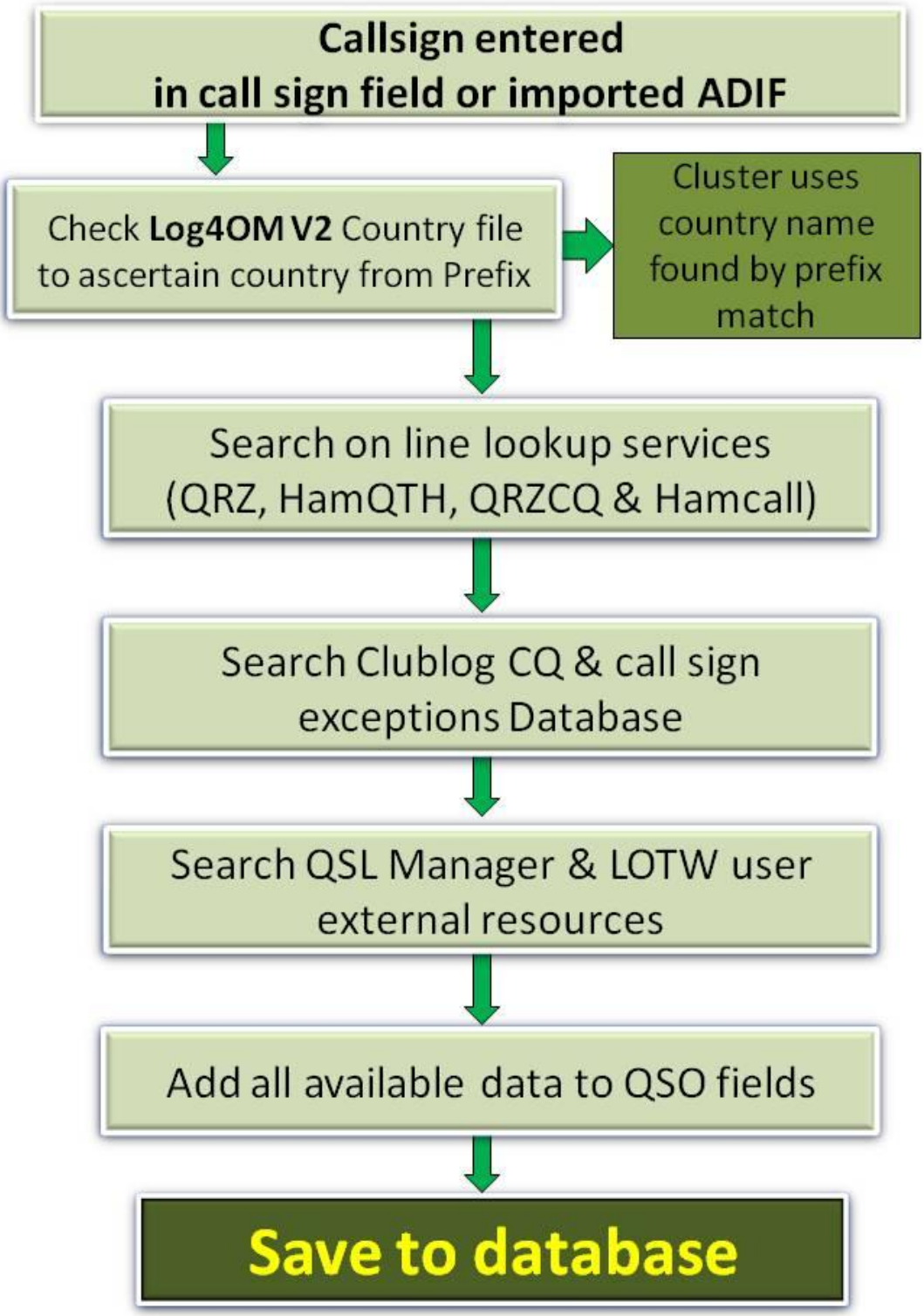
CQ and ITU zones present a difficult situation because due to either a station changing QTH or changes being made in zoning over the years the zones applicable to a call sign or country may alter according to when the QSO was made. Therefore, historic QSO's which already exist in the logbook or that are being imported from another program must be prioritised differently to a new (Real time) QSO being added.



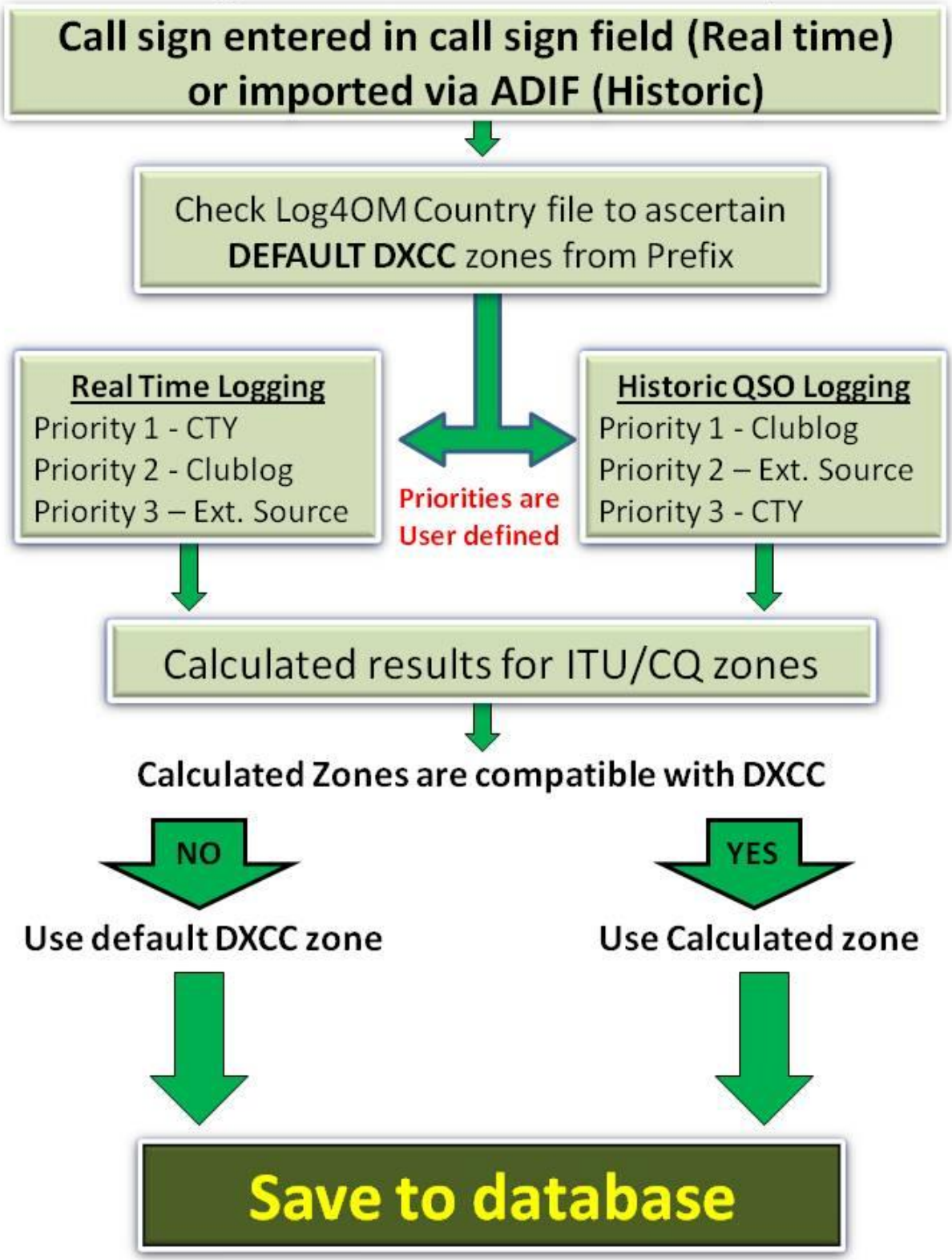
Call lookup flow charts

The first flow chart shows the lookup procedure for general call sign information, the second chart depicts the method of determining the correct ITU and CQ zones related to a call sign

Log4OM V2 Call Sign Lookup



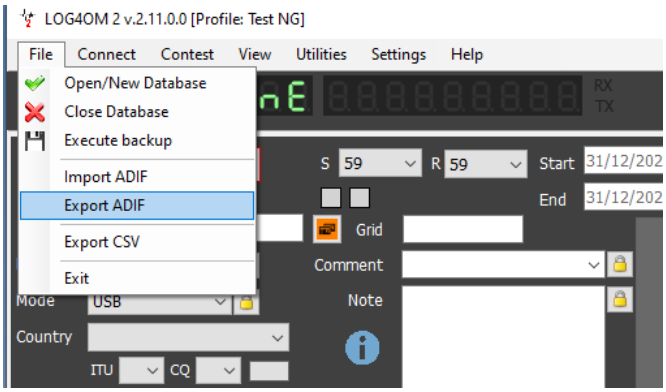
Log4OM V2 Zones Lookup



QSO Export

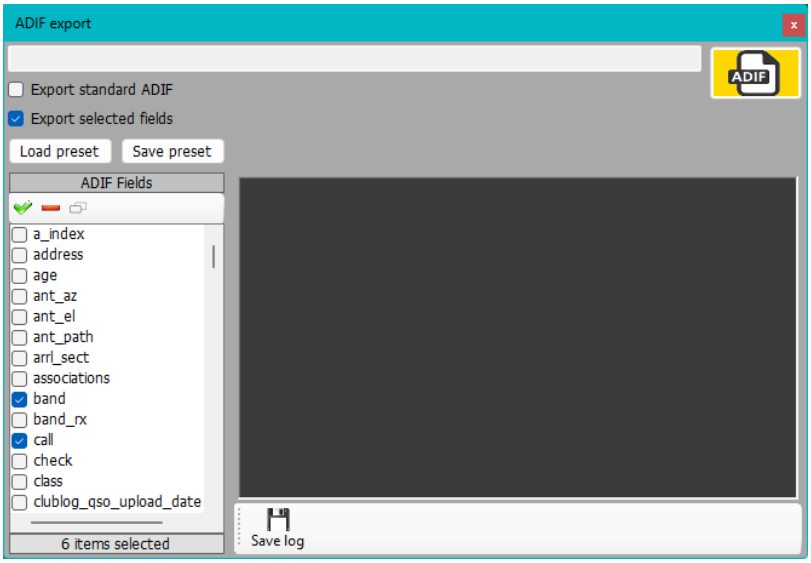
Bulk exporting

- To export the complete logbook, go to the 'File' menu and select 'Export ADIF'



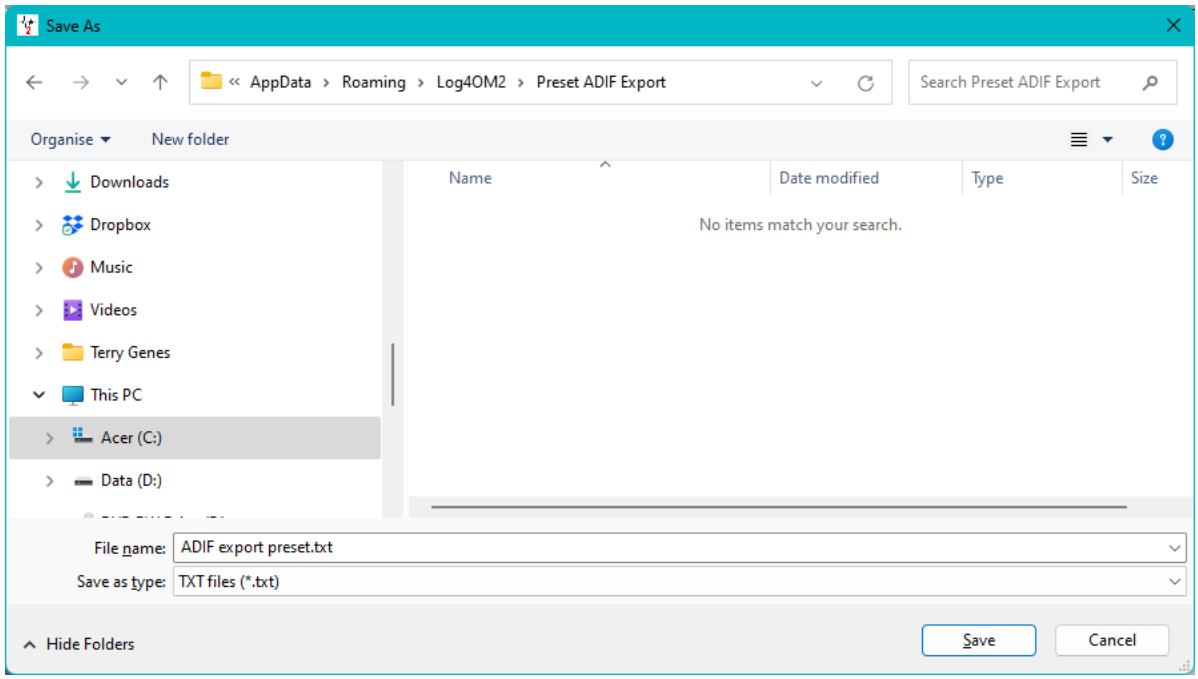
- If only standard ADIF fields are to be exported, not the complete data including Log4OM dedicated fields, check the box 'Export as standard ADIF'

- To export a user defined list of ADIF fields, check the ‘Export selected fields’ box and then check the fields required.

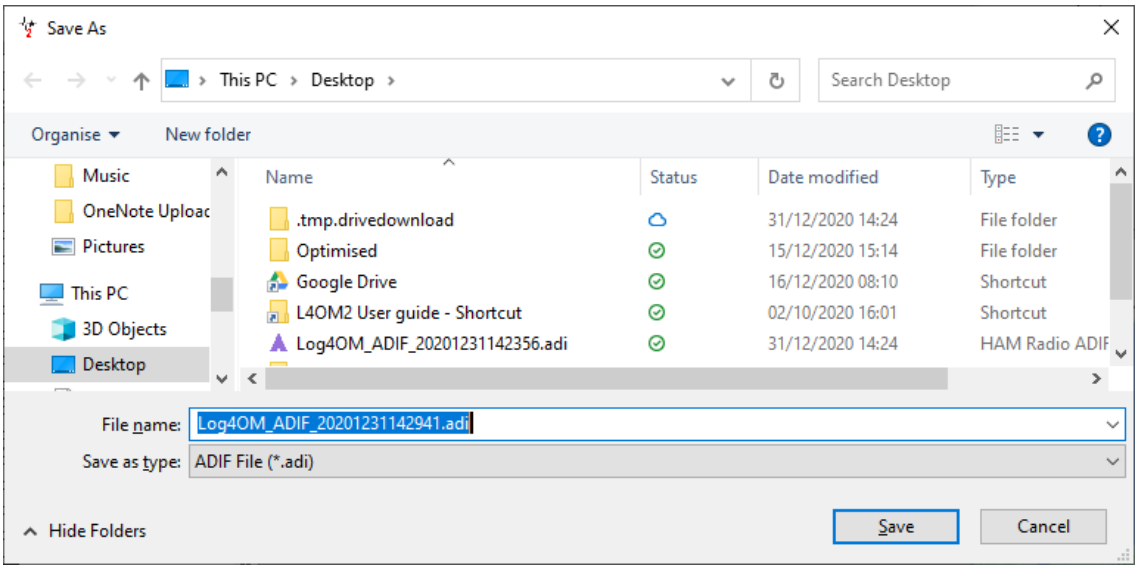


NOTE:

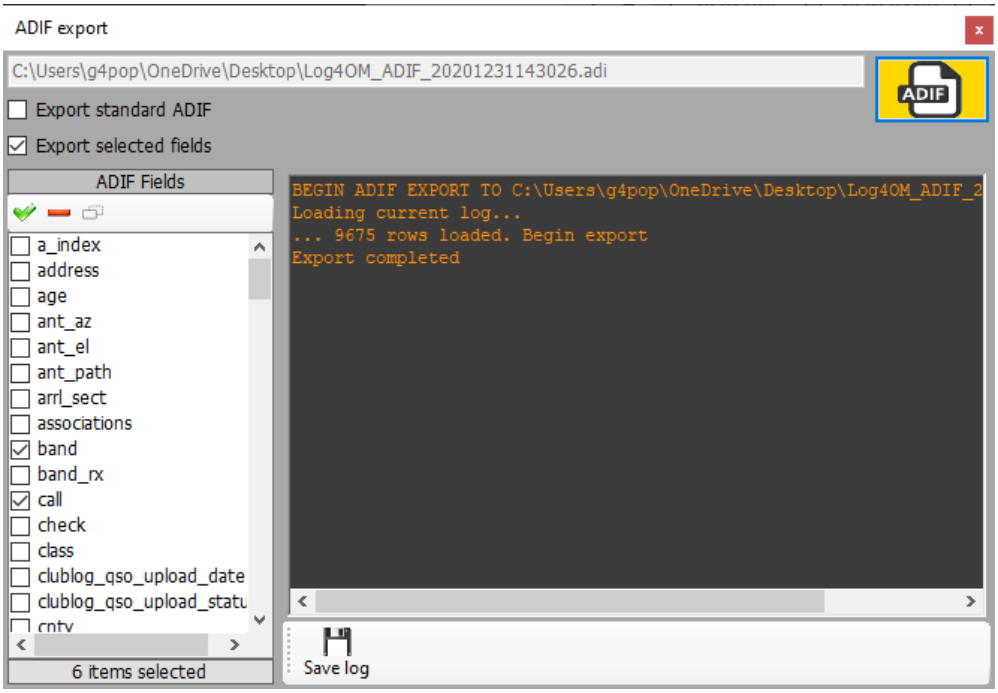
To save repetitive field selections for regular tasks the user can ‘Save Preset’ for later use and recalling that selection using the ‘Load preset’ buttons.



- Add a name and location by clicking the 'ADIF' button



- Clicking the ‘Save’ button starts the export and records the process in the text box

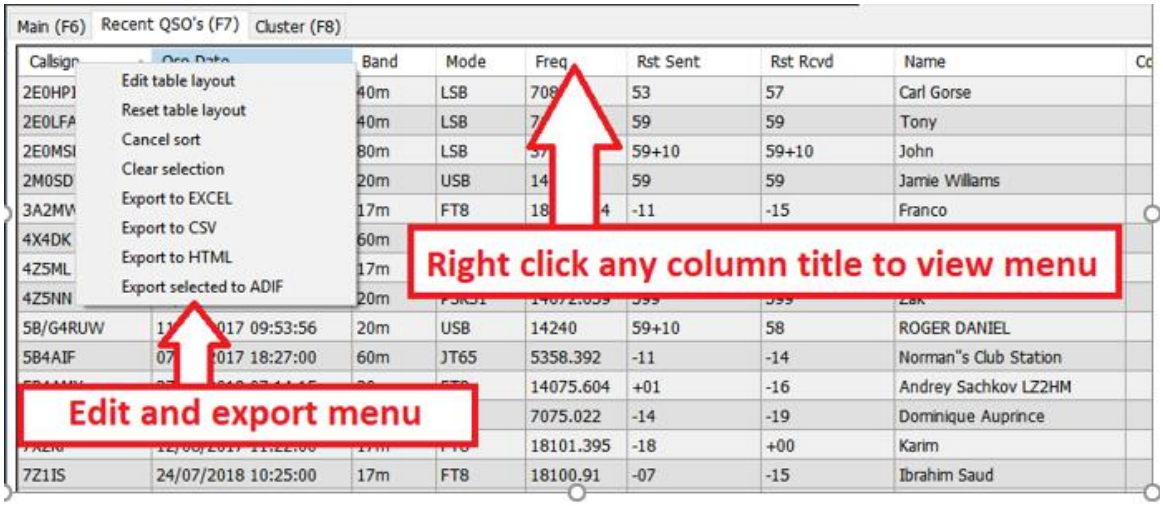


- The main window will display the exports progress and any anomalies, and this information may be saved to a text file by clicking the floppy disk 'Save' button.
- When ‘Export complete’ text is displayed in the text box the export window can be closed by clicking on the small red cross at the top right-hand corner of the window

Export selected QSO's

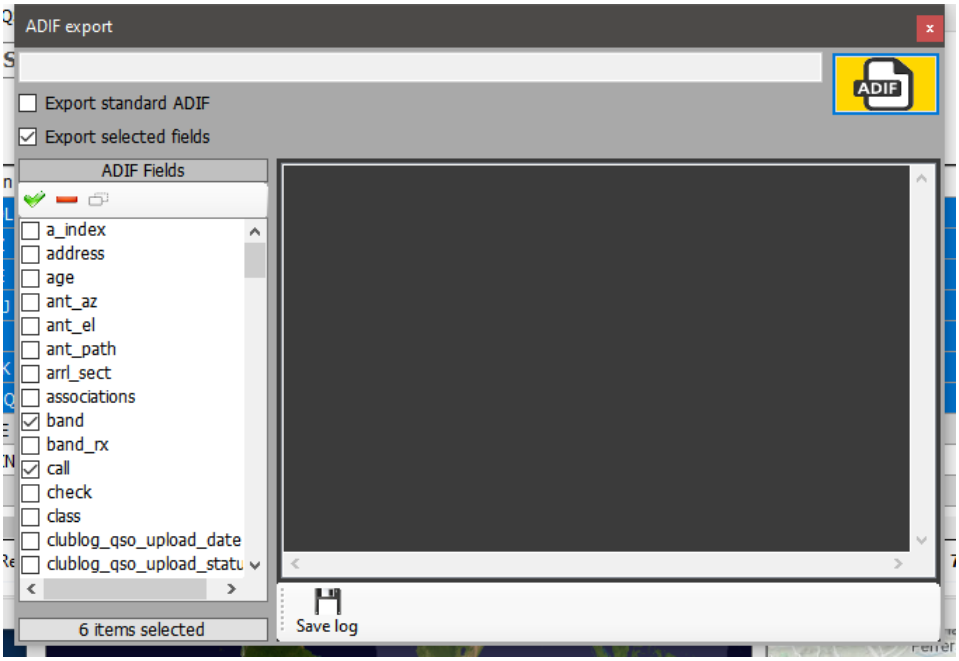
Log4OM Version 2 provides export of QSO's in ADIF, CSV, HTML and Excel formats in the grid views e.g. Awards, Recent QSO's, QSO Manager etc

- First select the QSO's to be exported by either the Windows method of left click, shift click or ctrl click, alternatively use the powerful search 'Filters' and the 'Select all' buttons at the bottom of the grids.
- To access the export action click the 'Export to ADIF' button at the top of the window if in the QSO Manager, in other grid views right click the title heading of a grid or right click on the selected QSO(s) and select the export required from the menu



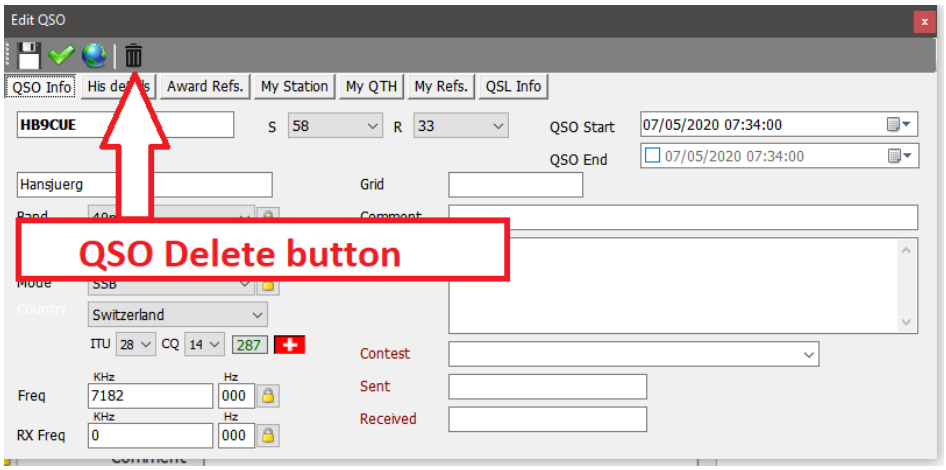
Exporting Specific ADIF fields

- Go to Utilities/QSO manager
- Sort and select the QSO's to be exported
- Click the 'Export to ADIF' button on the top tool bar
- Check the box marked 'Export selected fields'
- Click the yellow 'ADIF' button
- Save the file



QSO Deletion

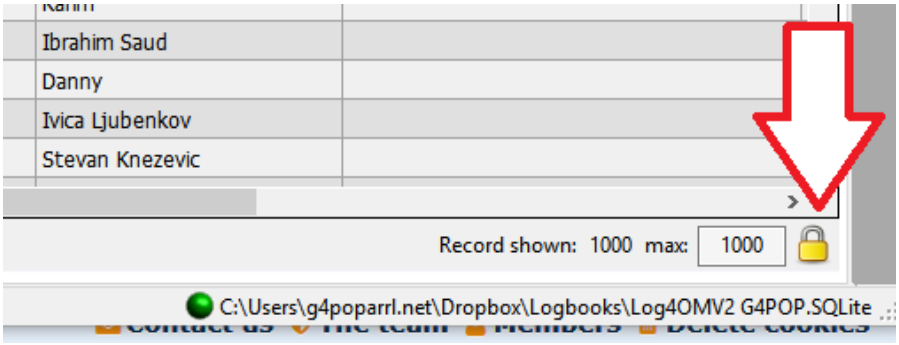
QSO's may be deleted individually from the QSO edit window by selecting the 'Trash bin' delete button on the top tool bar.



To open the edit window double left click on a QSO or select 'Edit QSO' from the right click menu.

Bulk deletion of QSO's

QSO's can be deleted selectively on by bulk by clicking the 'Unlock Delete' button at the bottom right corner of the grid. (When unlocked the padlock Icon turns red)

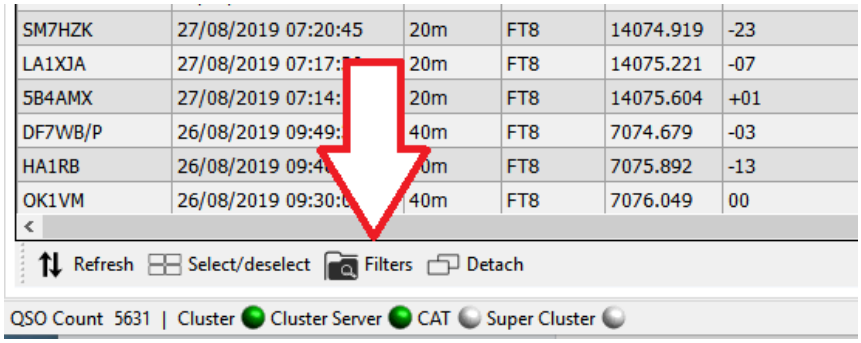


When the 'Unlock Delete' button is unlocked select the QSO's for deletion either by mouse click or filtering and then press the 'Del' button on the computer keyboard.

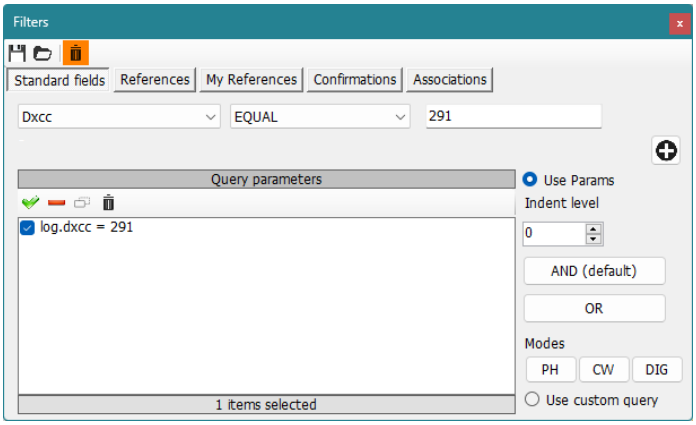
Filtering (Searching) QSO's

Log4OM version 2 provides even more powerful filtering possibilities without the need for in depth knowledge of regular expressions etc

The 'Filters' function is placed at the bottom of most grid windows as shown below.



Clicking the 'Filters' button opens the following window which contains four tabs. Standard fields, References and My references and confirmations.



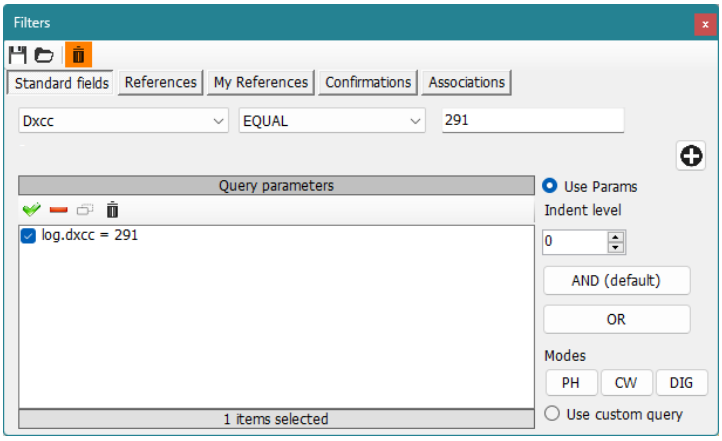
Standard fields

This is the simplest form of filtering whereby a standard field can be selected and a value for that field to be searched for which is either 'Equal to', 'Not equal to' or one of the other standard choices in the drop down menu.

Once the field, condition and value have been selected clicking the plus (+) button will add that filter to the list.

In the example above the filter is set to find all DXCC entities which are 'Equal to' DXCC 291 (USA) the result will be that only contacts with the USA will now be displayed.

The filters can be cascaded to drill down to very fine detail, the example below depicts filters cascaded to select only those QSO's that were with stations in the USA using CW on 80 meters that were in CQ Zone 3 (West Coast)

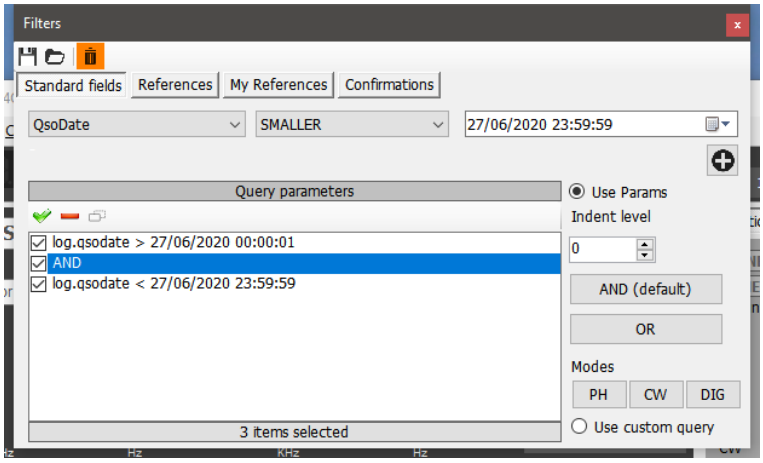


Additional choices can be made by using the 'AND' plus the 'OR' selections to the selection could be changed to CW AND FT8 to display QSO's with stations in the USA on both modes CW and FT8 on 80m in CQ zone 3, alternatively using the OR connector the result would display stations worked on EITHER mode.

Date filtering

When attempting to filter by date it is required to include a start and end time, not just the date.

e.g.
QSO date Greater than 09/02/2020 00:00:00 'AND' smaller (Less) than 09/02/2020 23:59:59 will filter all QSO's for that day



Using Indents.

The indent functions allow users to create blocks of query parameters.

As an example:
log.dxcc = 291 AND log.mode = CW AND log.band = 80m AND log.cqzone = 3

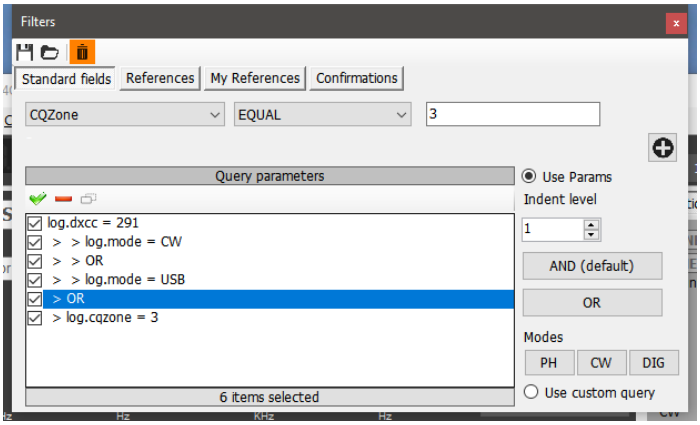
Which with the indent, will become

log.dxcc = 291 AND ((log.mode = CW OR log.mode = USB) OR log.cqzone = 3)

Which translates to:

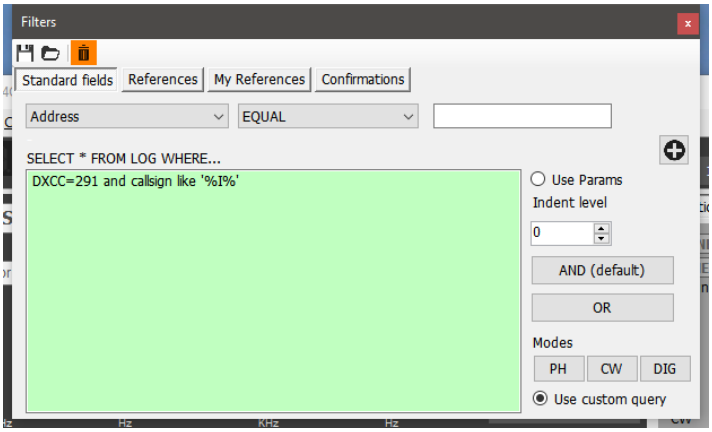
If dxcc = 291 and mode is CW or USB. If mode is not CW or USB, show data if CQZone is 3

The indent level is fundamental to use the engine correctly.



Use Query

If the 'Use query' button at the lower right is clicked, it enables the use of complex SQL queries.



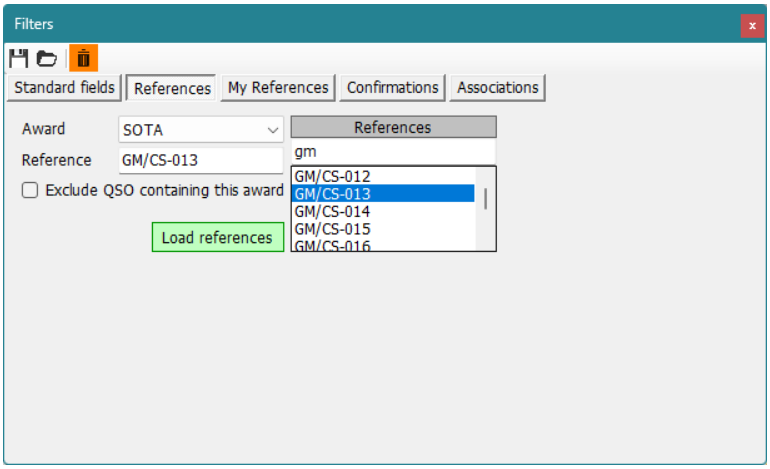
Save and load filters

Filters may be saved for reuse later by clicking the icons on the top tool bar

Query automatically contains “SELECT * FROM LOG WHERE” so users must only add their own where conditions

References

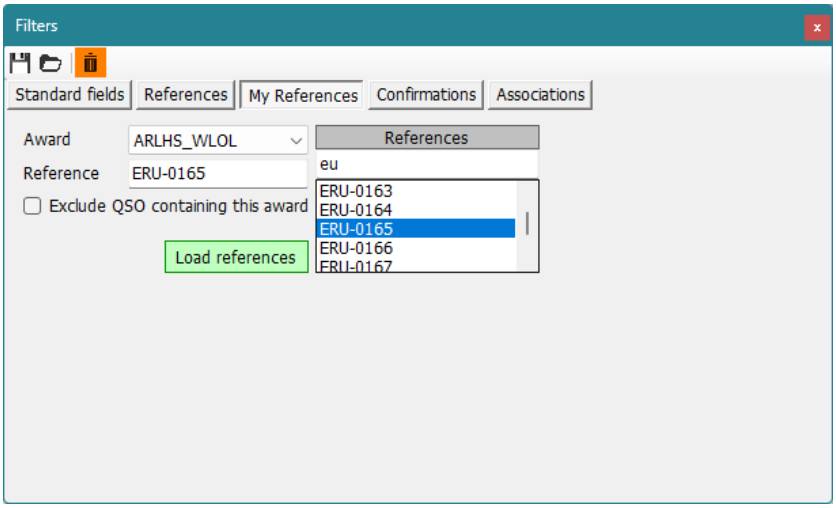
The references tab provides searching QSO's for stations worked activating specific awards references e.g. IOTA, SOTA, WAIL et



NOTE: If only the award is selected, and the 'Reference' field is left empty the result will be that all QSO's that qualify for that award will be displayed.

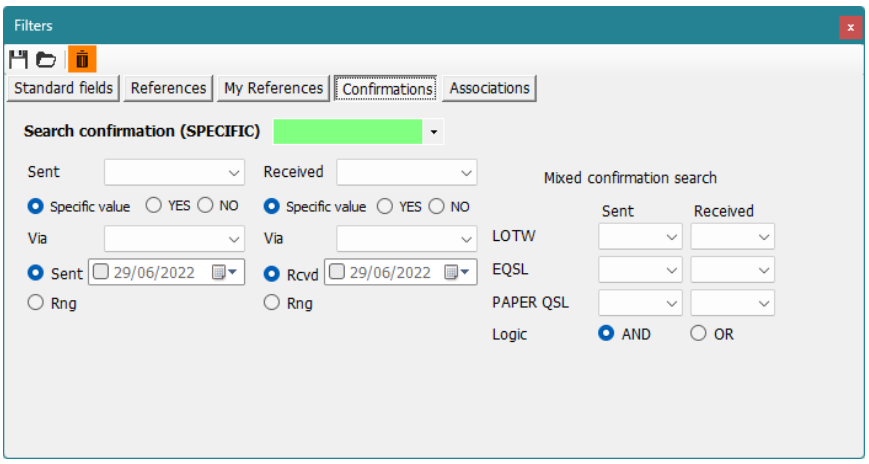
My References

Provides searching using the users own reference e.g. when the user was portable on an IOTA Island, Lighthouse, summit etc

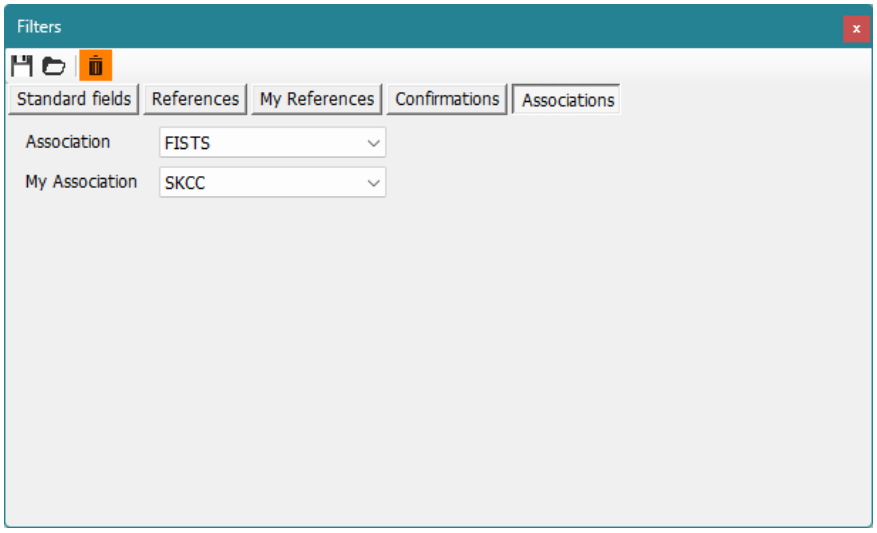


Confirmations

This filter enables searching on the QSO confirmation status of each form of confirmation, QSL, eQSL, LOTW, QRZ, HamQTH, HRDLog, Clublog and Custom and any combination of confirmation.

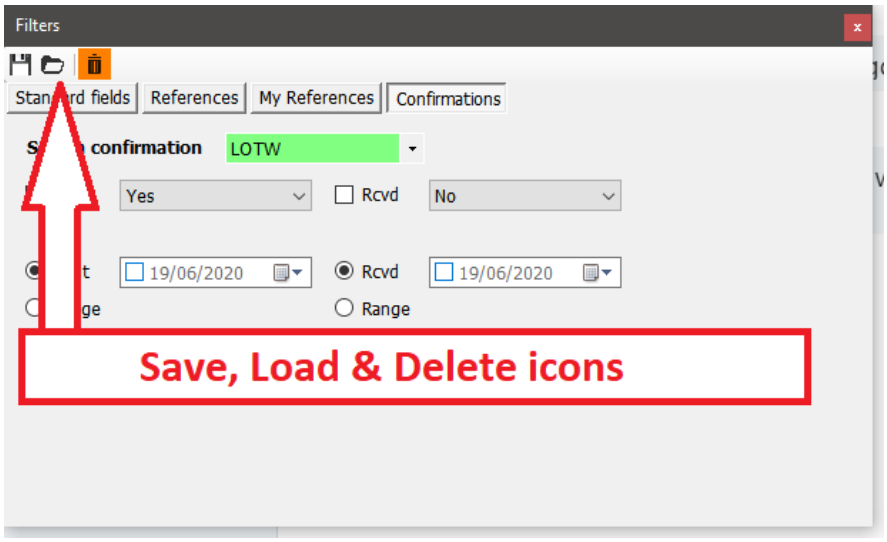


Associations



Filter - Saving, loading and deleting

To avoid repetitive construction of filter Log4OM provides a save, load and delete function using the icons at the top left of the filter window.



Filters – Actioning

When the filter dialog box is closed by clicking on the small red cross at the top right of the window the filtered are activated and the filtered results are displayed in the adjacent grid window

Telnet Cluster

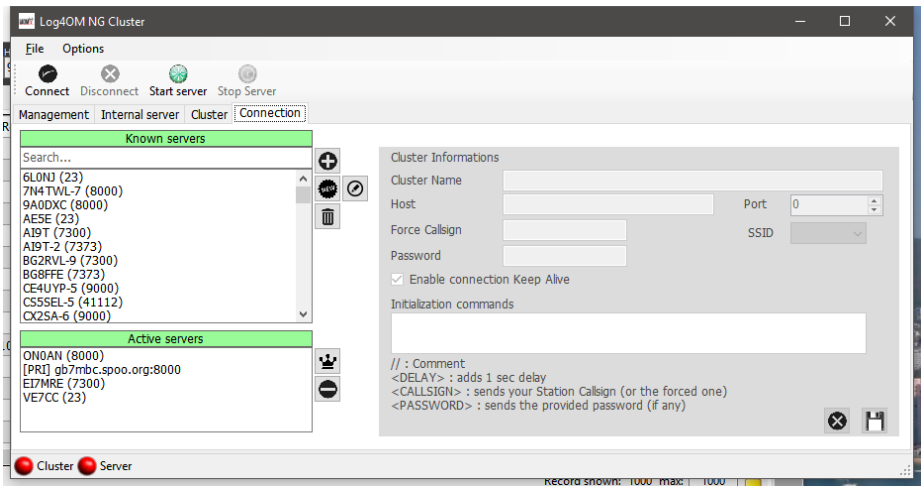
The Telnet cluster in Log4OM V2 will connect to many different cluster and skimmer servers simultaneously and will aggregated the results to provide a high quality list of DX spots without unnecessary duplicates.

Log4OM V2 also provides a cluster server to enable these aggregated results to be sent to other client software.

Setting up the Telnet cluster

Access to the Telnet server is by the Connect/Telnet cluster menu

Servers may be selected from the 'known Server' list and added to the 'Active server' list and the user can add a new cluster server to the list by completing the cluster information form followed by clicking the save icon.



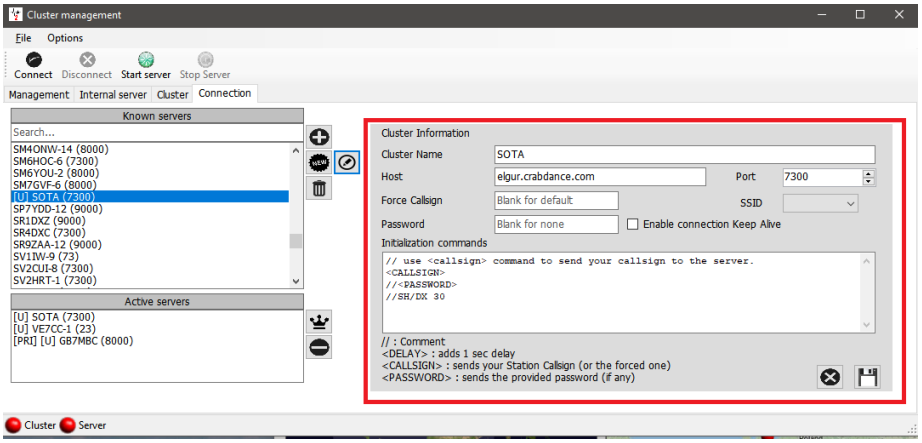
When all the desired cluster servers have been selected clicking the 'Connect' icon on the tool bar will open the 'Management' tab and display the connections being made and the incoming spots.

Adding and editing Cluster servers

User defined cluster servers may be added by clicking the ‘New’ button and adding the server and login details in the panel on the right-hand side.

Similarly, an existing cluster server may be edited by selecting it in the top left-hand panel and clicking the ‘Pen’ (Edit) icon.

When the addition or editing is complete it must be saved by clicking the save icon ‘Floppy disk’ at the lower right



Important note:

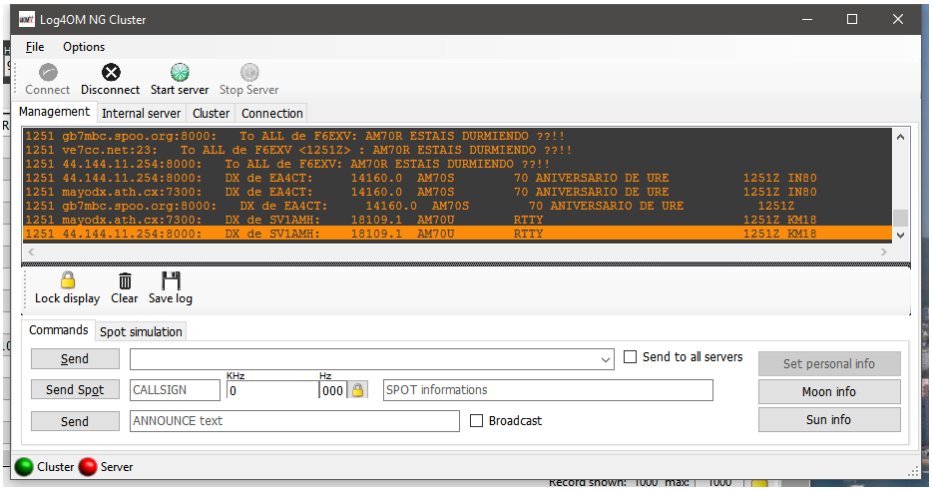
When editing an existing cluster that has already been selected as an active server it is necessary to remove it from the active server list, select the server in the known server list and click the ADD (+) button to replace it in the active server panel.

Primary cluster server

The Primary cluster is indicated with [PRI] in the Active servers list will receive user commands like spots and other messages and will be also the standard destination for incoming commands through internal cluster server. The Primary cluster can be selected with the “crown icon”.

User cluster servers

User defined cluster servers are prefixed with a (U) and are preserved when the cluster server list is updated/



Sending cluster commands

Cluster commands, filters, announcements, and spots may be sent from the commands tab in the 'Management' tab.

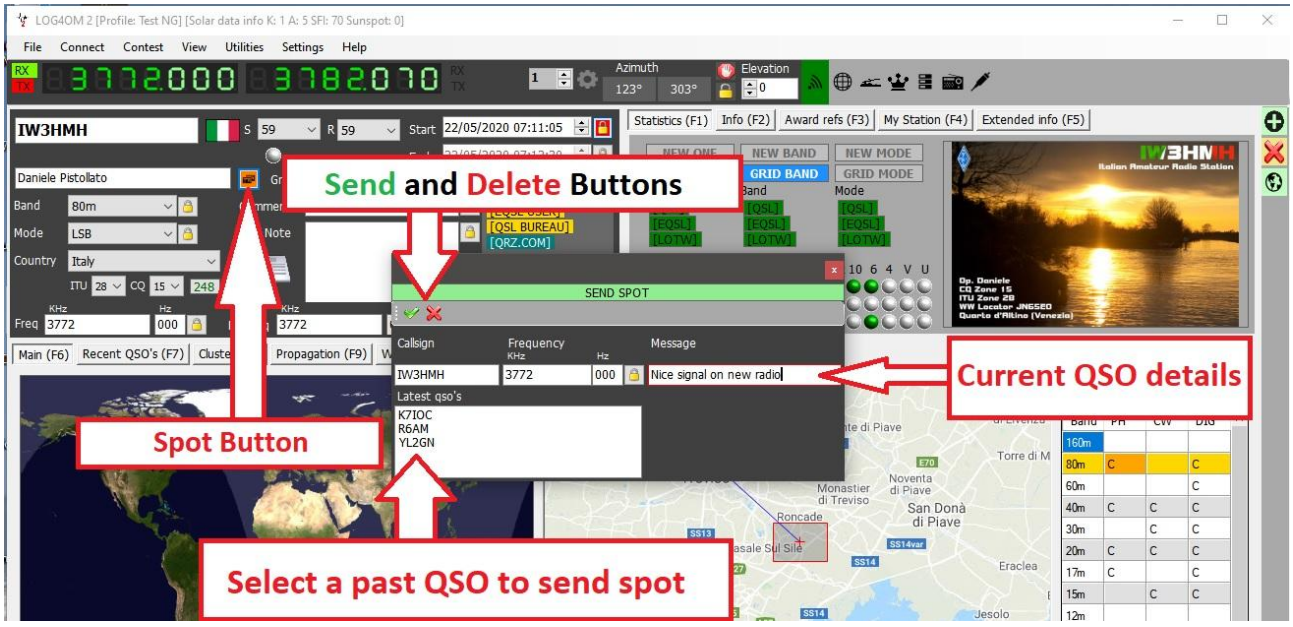
The 'Commands' tab enables the user to send commands like Show/DX or set special cluster server filters, for details of cluster commands see the documentation for the chosen cluster servers, DX Spider, CC User etc) Spots can also be sent from this window providing the user is registered with the chosen cluster servers.

Sending spots to a cluster

Spots can be sent directly from the QSO input screen by clicking on the send spot icon indicated in the graphic below.

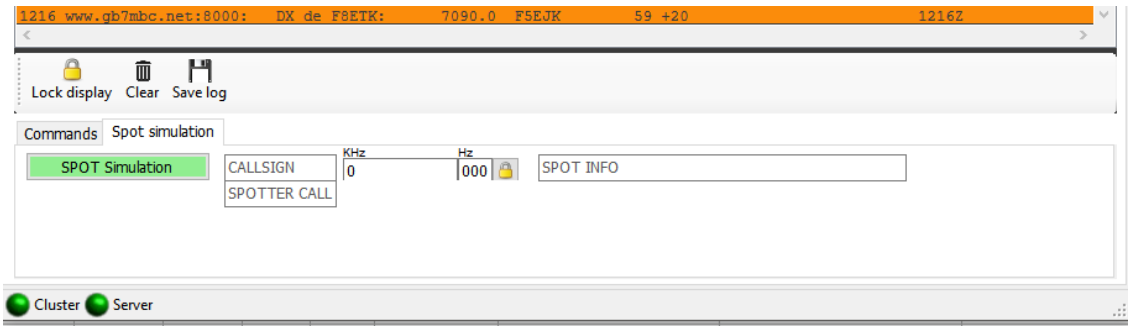
Please Note:

The user must be registered with a cluster server to be able to send spots to it



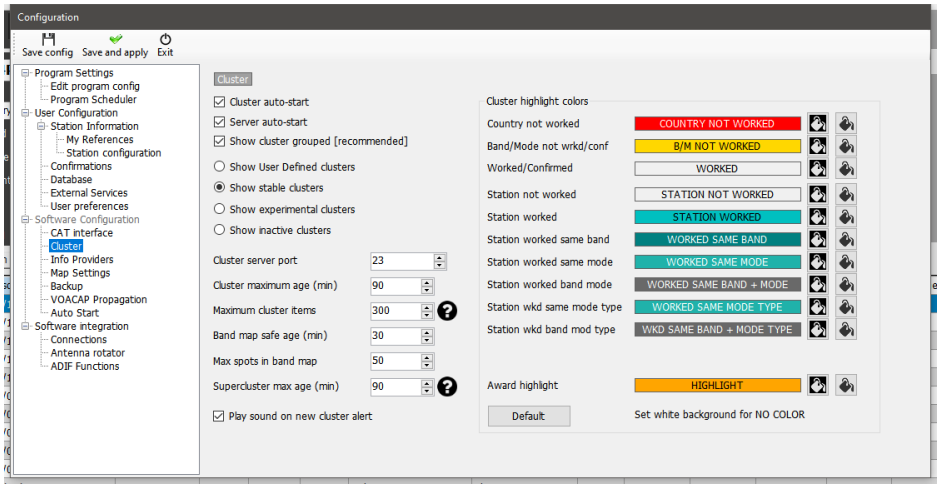
Spot Simulation

The 'Spot simulation' tab in the Connect/Telnet Cluster/Cluster Management screen allows the user to simulate sending a spot for test purposes without that spot being sent to the on-line cluster servers the spot is only displayed on the local computers cluster window.



Cluster configuration

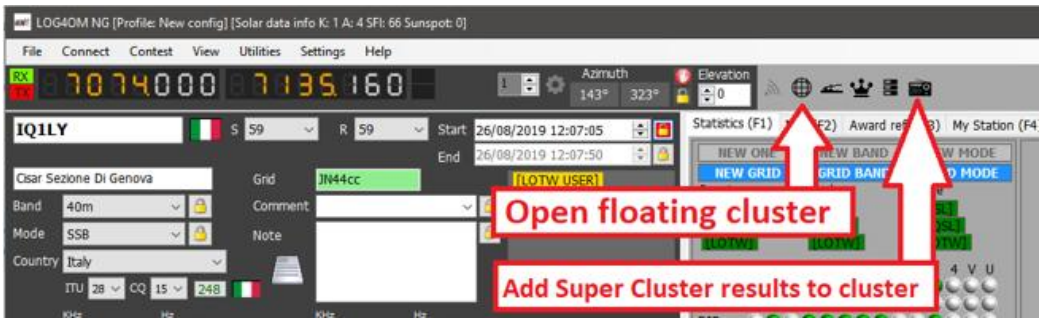
In the Settings/program configuration menu there are various options for the Telnet cluster e.g. Auto start of cluster and server and cluster highlighting selection.



The cluster can be started directly from main USER INTERFACE. Cluster disconnection is possible only through cluster management screen

Cluster displays

The main cluster is included in the main user interface; however, a floating cluster screen can be deployed by clicking the cluster icon on the top tool bar.



Both cluster displays provide displays of country worked/confirmed status and choices of band, mode and display views as below.

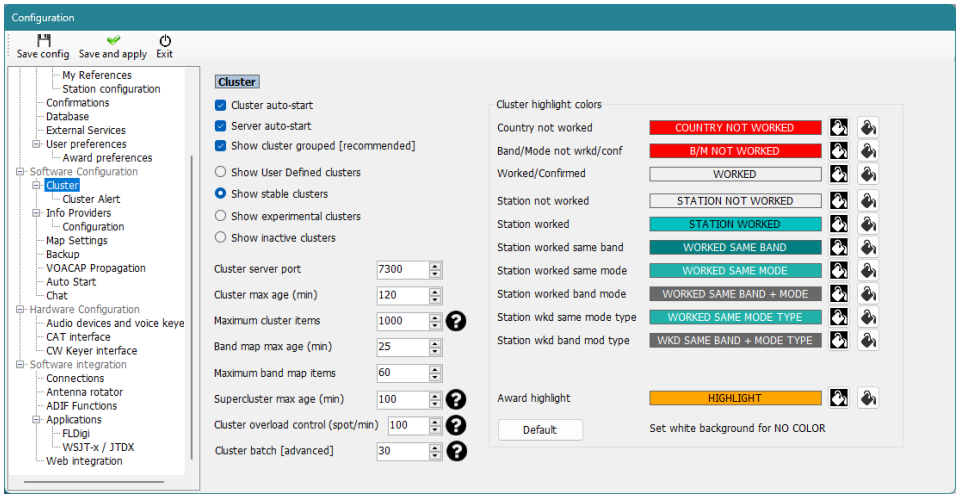
Super Cluster

The Super Cluster gathers data from HRDLog of QSO's recently logged by HRDLog users and amalgamates that information with the main cluster results providing an extremely accurate indication of spot quality.

Example:
If G4POP logs a QSO with VK7AMA in the last few minutes and spots are also received from the telnet clusters for the same band and mode then there is a high probability that VK7 is workable from the UK.

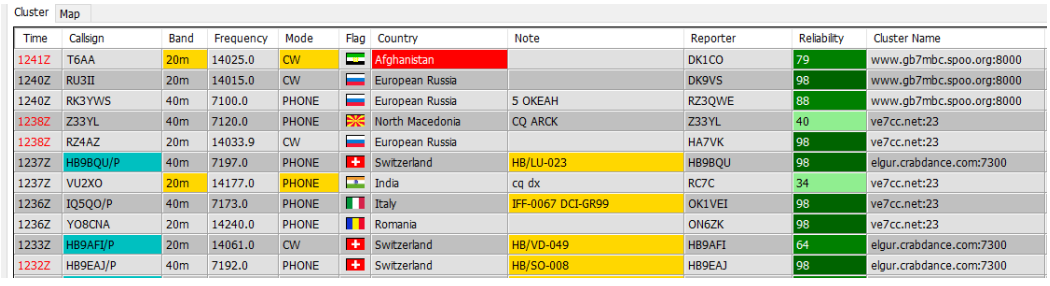
In the image above the 'Data quality' column displays spots of HIGH quality which have been received by Telnet and from the HRDLog data, whereas POOR quality indicates the data was only received via HRDLog and SPOT are spots received only via Telnet.

The age and maximum number of spots displayed in the Cluster, Band map and from HRDLog for the Super Cluster display can be selected by the user in the settings/program configuration/cluster tab as shown below.



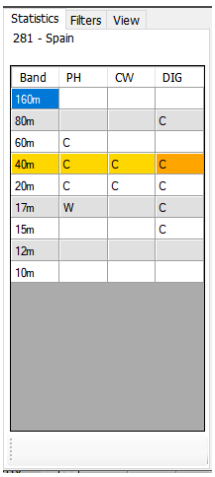
Cluster time coloured red

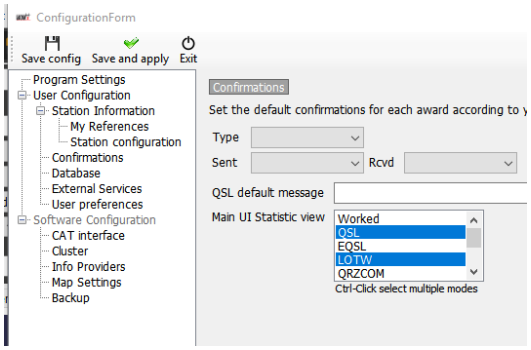
When the time for a spot is in a red font it indicates that the spotted station is a known LOTW user



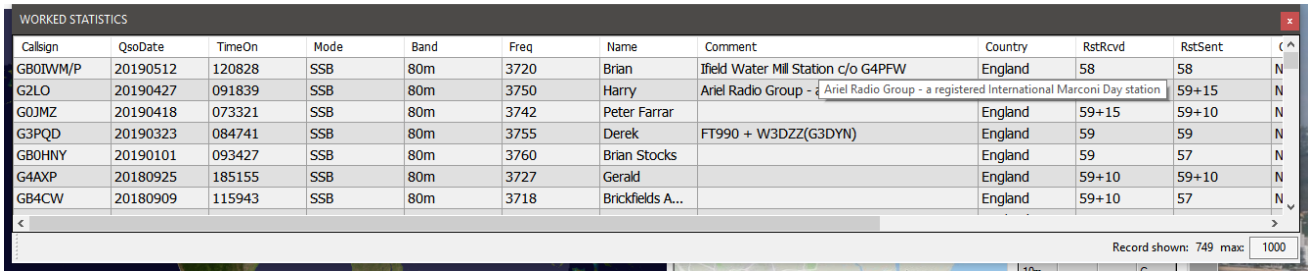
Statistics Pane

The 'Statistics' pane displays the worked/confirmed status and by what method of confirmation, of the country depending on that selected in the Program configuration/Confirmations menu shown on the right below.





Double clicking a cell in the statistics pane marked with a W or C will open a worked before list of all of the contacts with that country on the band/mode of the cell selected.



Cluster Spot Modes

Cluster servers DO NOT send any mode information in the data they provide, therefore Log4OM derives the mode from the Log4OM bandplans (either from the fixed frequencies like FT8 shown in bandplan xml or the individual band data)

On rare occasions a spotter may include a mode in the 'Notes' field and if this is the case Log4OM will use that information to override any mode derived from the Log4OM bandplans.

There are three cluster columns available displaying mode information and they function as follows

Mode

The mode group either Phone, CW or Digital

The 'Mode' is derived from the bandplan files according to the section of the band the frequency falls in, or from the notes field if the spotter has included mode information.

Spot Mode

This column displays the submode and is obtained either form the spot frequencies in the beginning of the bandplans or from the notes field in the incoming cluster data. Sub mode example could be DOM-M which is a submode of Domino and therefore in the Digital mode group or FT8 which is a submode of MFSK and also Digital

Modulation Type

This is the used to set the radio when a spot is clicked and derived from the bandplans and could be USB, LSB etc

About Bandplans

The International Amateur Radio Union (IARU) divide the world into regional bandplans.

These three regional IARU organizations corresponding to the three ITU Radio Regions:
Region 1 — Africa, Europe, Middle East, and northern Asia
Region 2 — the Americas
Region 3 — the rest of Asia and the Pacific

The bandplans define the operating frequency limits and modes on which individual national bandplans are based.

Log4OM includes the three basic IARU regional bandplans plus four country specific bandplans for Brazil, The UK, USA and Denmark.

When a user in the UK, USA, Brazil or Denmark enters their information in the Station Info menu of the Log4OM program config, Log4OM will automatically use the applicable bandplan for those countries. (bandplan_dxcc108.xml, bandplan_dxcc221.xml, bandplan_dxcc223.xml or bandplan_dxcc291.xml)

Other countries will use the regional bandplan applicable to the region (bandplan_r1.xml, bandplan_r2.xml or bandplan_r3.xml)

Users may tailor the regional or country specific bandplans to their specific requirement and save the bandplan as a 'USER' bandplan e.g. bandplan_r1_user.xml or bandplan_dxcc123_user.xml. When Log4OM is started it will choose a user bandplan if one is available and that user bandplan will not be overwritten by subsequent program updates, as are the default bandplans.

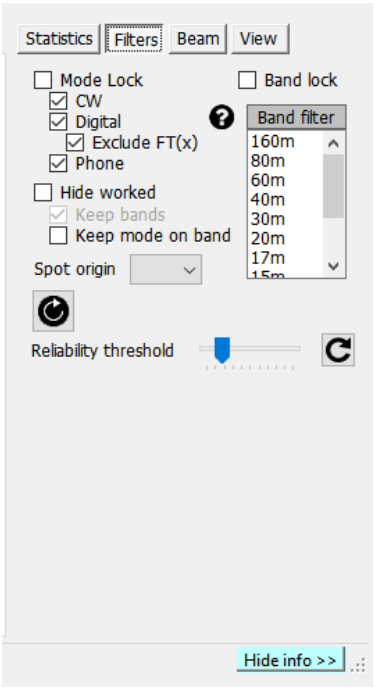
Band maps are not editable in the resources editor the user must use notepad to modify the files found in the C:\Users\USER NAME\AppData\Roaming\Log4OM2\bandplan folder.

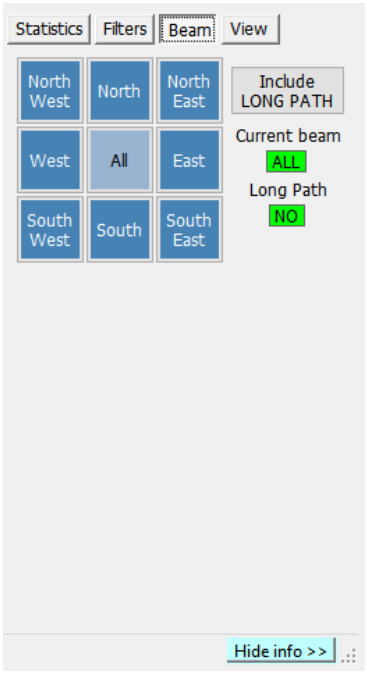
The bandplan information is used in various areas of the program, like the cluster, band maps etc

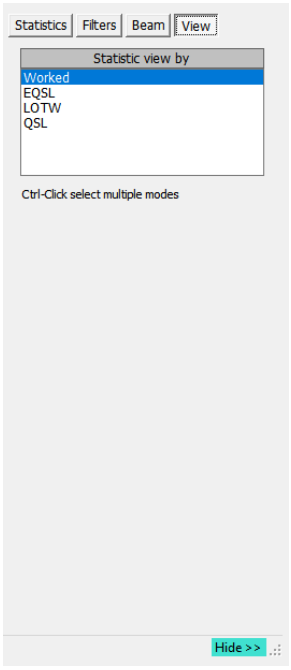
Cluster filters

The cluster filters provide a method of tailoring the spots to be displayed by band, mode, worked and QSL confirmation status - Use Ctrl/Click to select or deselect bands or statistics confirmation types.

The Beam filters enable selection of spots from a specific compass direction via short path or short and long path. This will enable filtering based on current beam direction in order to optimize efficiency.

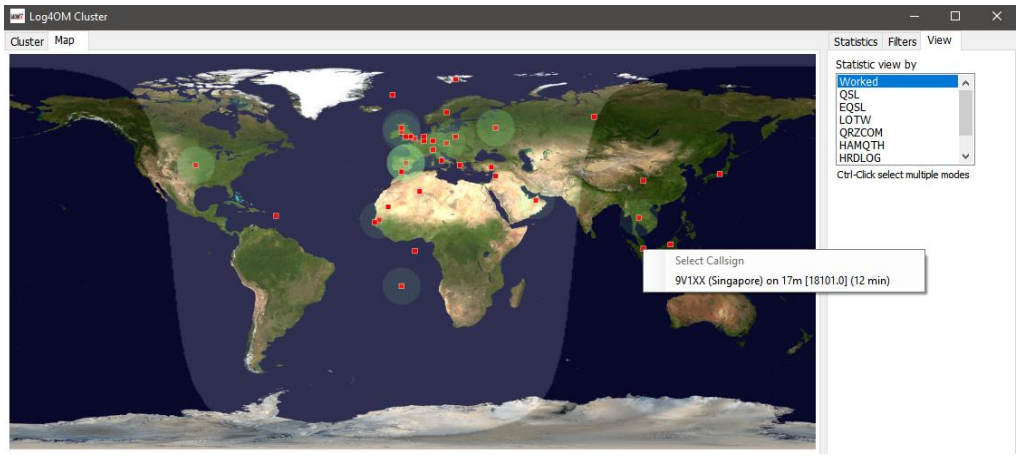






Cluster spots map

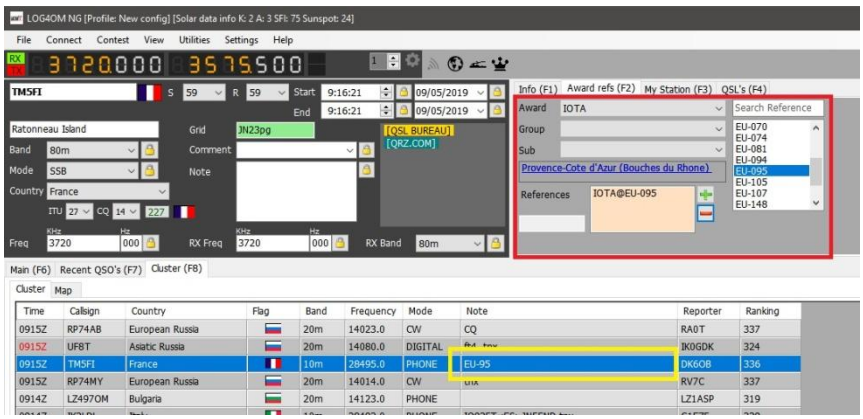
Clicking the 'Map' tab in either cluster will display a map of the current cluster spots, clicking a spot reveals the details of the spot a further click on the revealed call sign will perform the same actions as detailed in the 'cluster' actions' section.



Intelligent cluster

When a spot is clicked on in the cluster if there is an award reference e.g. IOTA, SOTA or Log4OM V2 designer awards the text in the cluster comments/notes field is parsed, matched and added to the awards panel.

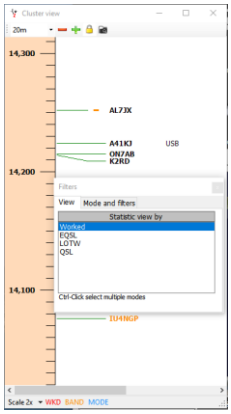
Below is an example of an IOTA reference being 'Read' from the notes field automatically.



Cluster Band map

Cluster band map can be accessed by the Connect/Cluster Band View menu and multiple Band map can be opened for individual bands.

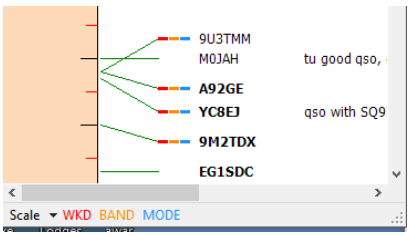
The band map is automatically reopened when restarting Log4OM V2 in the same size and position as last opened.



Band map filters

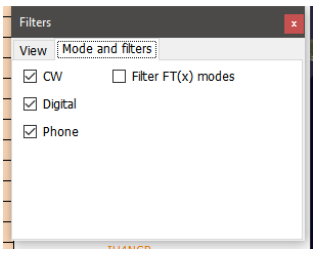
Clicking the small folder icon at the top of the band map provides options to change the statistics view from 'Worked' to confirmation types (EQSL< LOTW or QSL) and multiple confirmation types can be selected by holding the Ctrl key depressed and left clicking the menu selections.

The confirmation status for the selected filter(s) is indicated by the small coloured bars to the left of the call signs



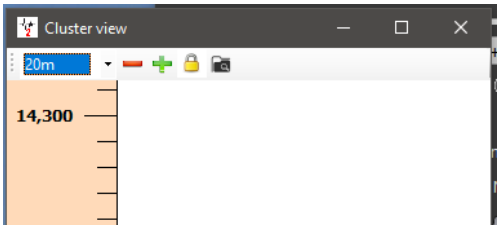
WKD = Worked (Red)
BAND = Band (Orange)
MODE + Mode (Blue)

The 'Mode' tab in this window provides a choice of Phone, Digital or CW spots to be displayed.



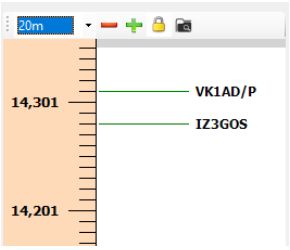
Band map Bands

The drop-down menu at the top left provides choice of bands to be displayed



Band Map Scale menu

The zoom level or scale of the band map can be changed using the 'Scale' drop down menu at the lower left of the Band Map from 0.5x to 15.0x or the +/- buttons at the top of the band map window.



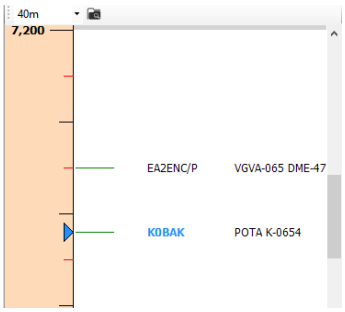
Band map Lock.

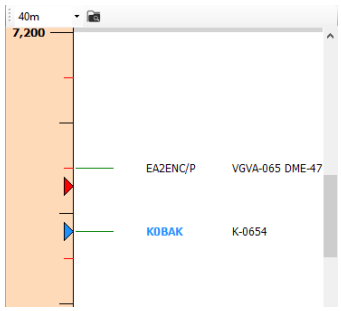
Clicking the yellow padlock locks the band map frequency display to the band selected on the radio if there is a CAT connection.

Band map CAT frequency display

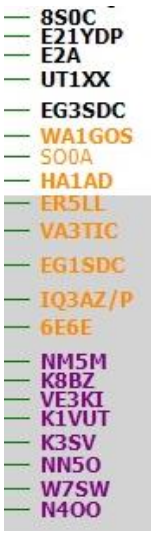
The current radio RX/TX frequency is displayed on the band map frequency scale by a blue arrowhead marker, as the image on the left below.

When in split mode (assuming the radio is supported by Omnirig) the blue arrowhead marker indicates the RX frequency and the red arrowhead marker the TX frequency, as shown in the image on the right below.





Band map Call sign colours



Black = Phone

Orange = Digital

Purple = CW

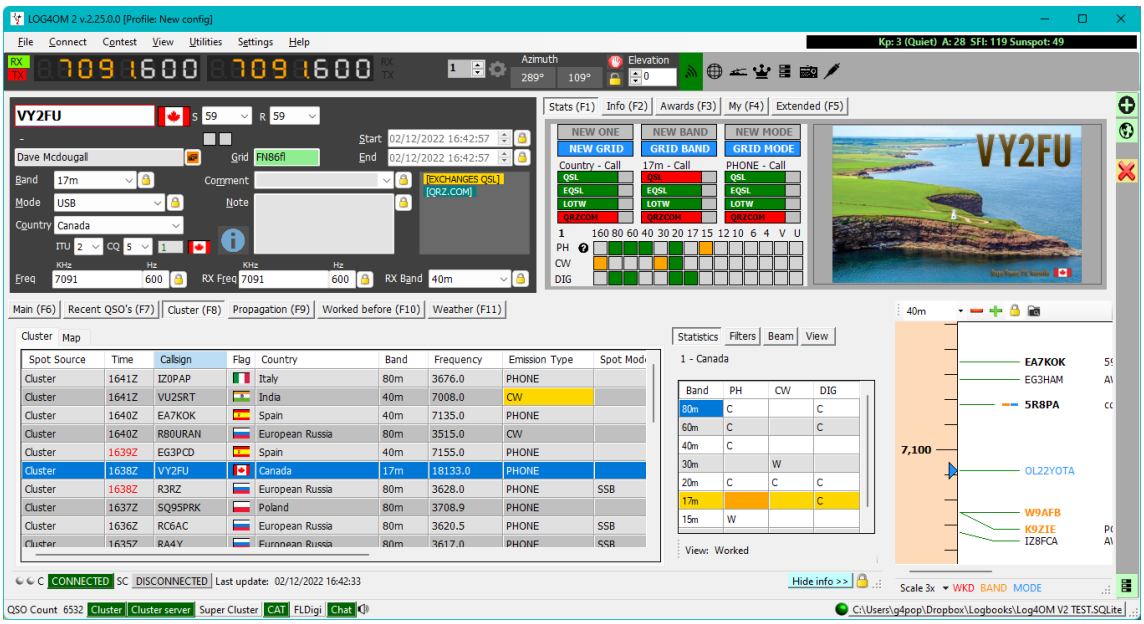
Blue = Spot close to the radio VFO frequency

Bold = A recent spot (e.g. spotted in the last 5 mins)

Please note: Clicking on a spot in the band map will activate a lookup in the main UI F6 view including country worked statistics, it will not activate the country statistics in the main cluster because the main cluster is able to function independently.

Band Map Mouse Actions

Identical to Cluster actions below with the addition of the ability to 'SCROLL' the band up and down with the mouse scroll wheel.



Cluster actions

Single click on cluster spot

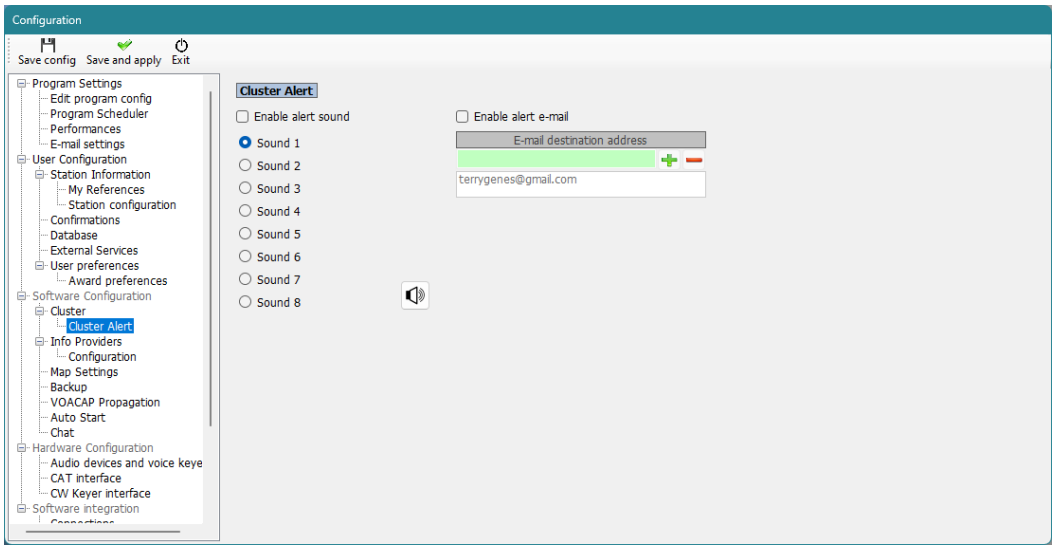
1. Adds call to call sign input field
2. Looks call sign up in Clublog Exceptions file, QRZ, Recent calls and completed data fields
3. Checks for SOTA or IOTA or other award reference in comments and notes fields and completes the appropriate awards program fields.
4. Fills country worked by mode and band graph
5. Draws great circle path on world map
6. Opens the large-scale station location map and biography photo if available from lookup site
7. Fills SP/LP headings, antenna elevation and distances in the Contact(F3) tab
8. Adds data to the Info (F1) tab for the station
9. Displays 'Worked' banner in the lookup data box - If 'Worked before' is clicked the worked before window opens displaying all previous contacts with that station.
10. If a call sign is found for call during lookup, clicking the lookup providers name (QRZ, HamQTH) opens the web browser at the page of the call sign
11. Fills mode, frequency and band in the input window if CAT is enabled.

Double click on cluster spot

All as 1 above plus changes radio mode and frequency on the radio.

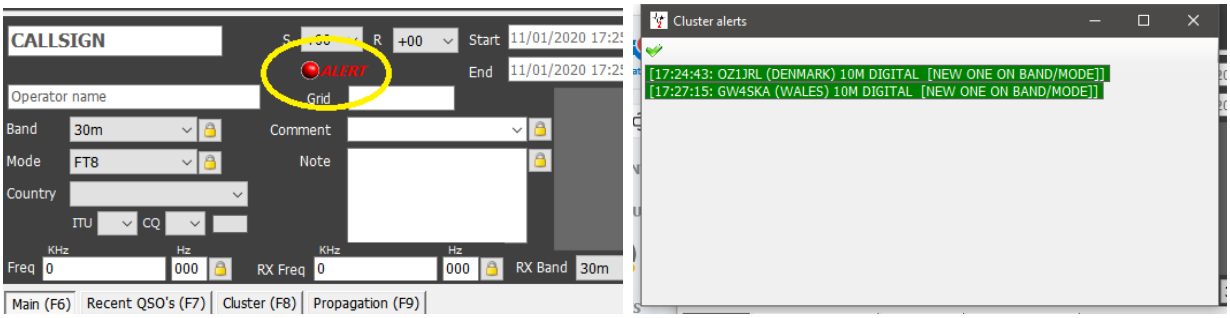
Cluster Alerts

When a desired spot is received by the cluster an audio alert can be activated by checking the 'Enable alert sound' check box in the Settings/Program Configuration/cluster' ALERTS tab.



The audio alert will sound, and an alert message will appear in the main UI as below

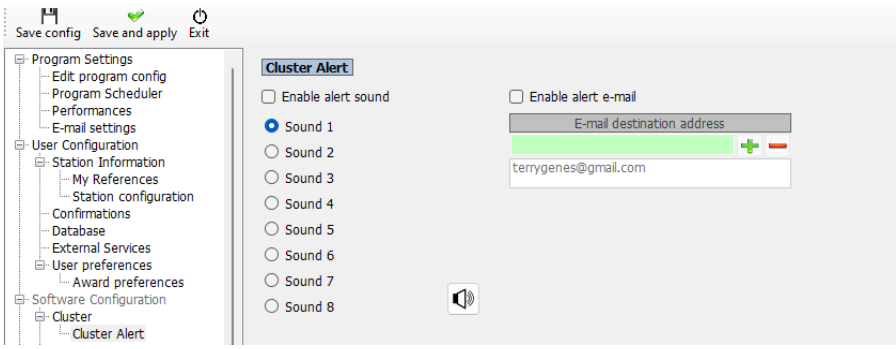
The required alert sound can be selected from the six choices and each one can be tested by clicking on the speaker icon.



Left clicking the alert icon will open the list of alerts as shown on the right above, right clicking on the alert icon will clear it.

Email Spot Alert Notification

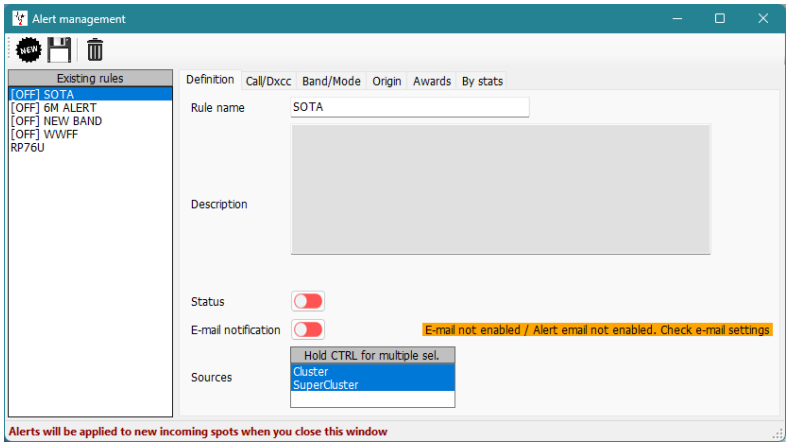
When a required spot is received an email can be automatically sent to the user by enabling and completing the email alert field.



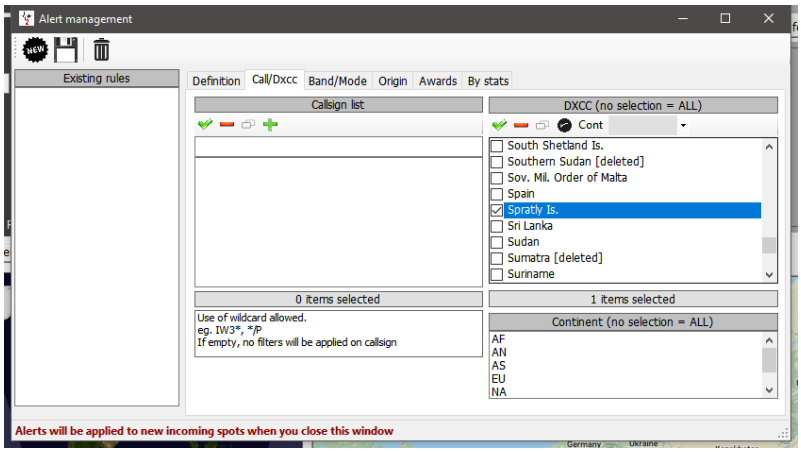
Filtering alerts

Defining the rules that will trigger the alert is done in the 'Alert management' window (Settings/Alert configuration)

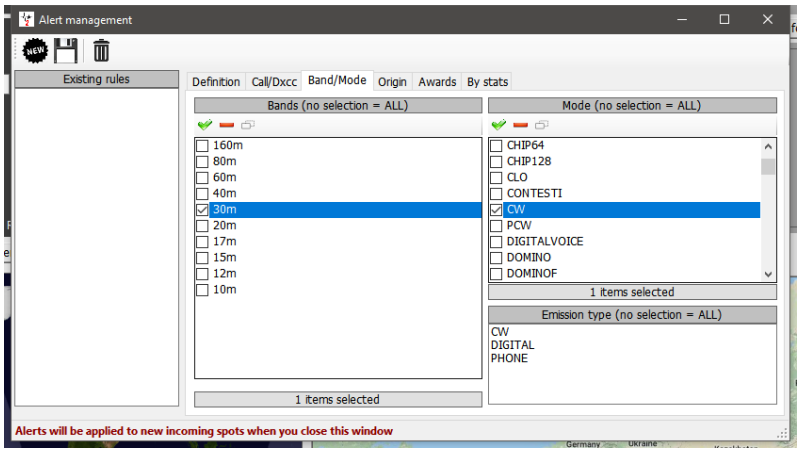
- Provide a filter rule name and description in the definition tab and select the cluster or clusters to watch, turn the status switch on to make the filter active.



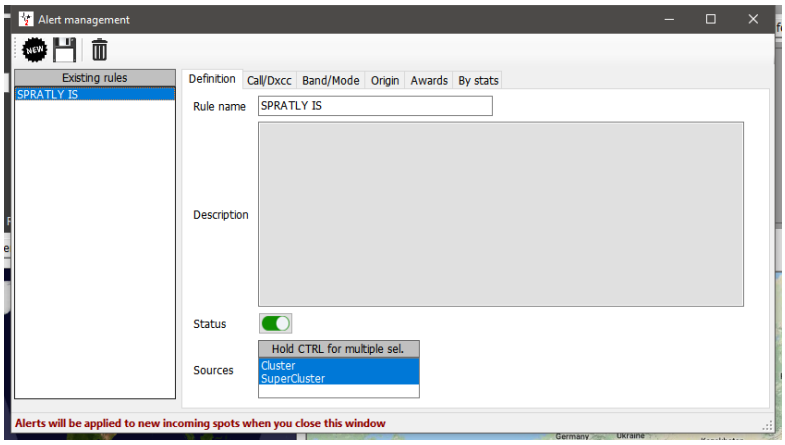
- In the Call/DXCC tab check the name of the DXCC country to be alerted for



- If the DXCC entity is required on specific bands or modes select the band/mode in the Band/mode tab. This example will alert for every occasion a spot for Spratly



- When all selections have been chosen click the floppy disk save icon and the alert filter will appear in the left side panel.

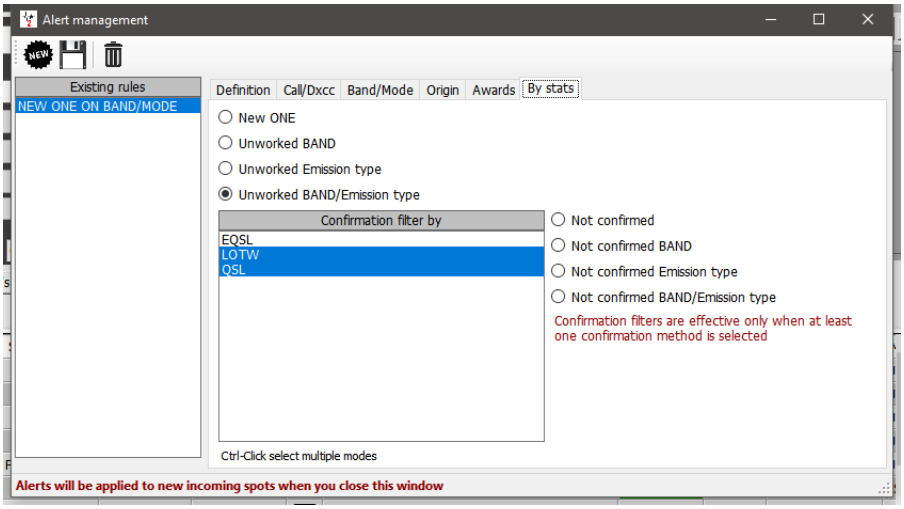


Alerts can be created by Call sign, prefix or suffix, DXCC, Continent, Band, Mode, Emission type, Spotter call sign, spotter continent, spotter country or for specific awards identified in the Notes field.

These criteria can be combined to finely filter the required alert. As an example sound alert when.....
..... G4POP is /P on 60m CW and is spotted by OZ1W

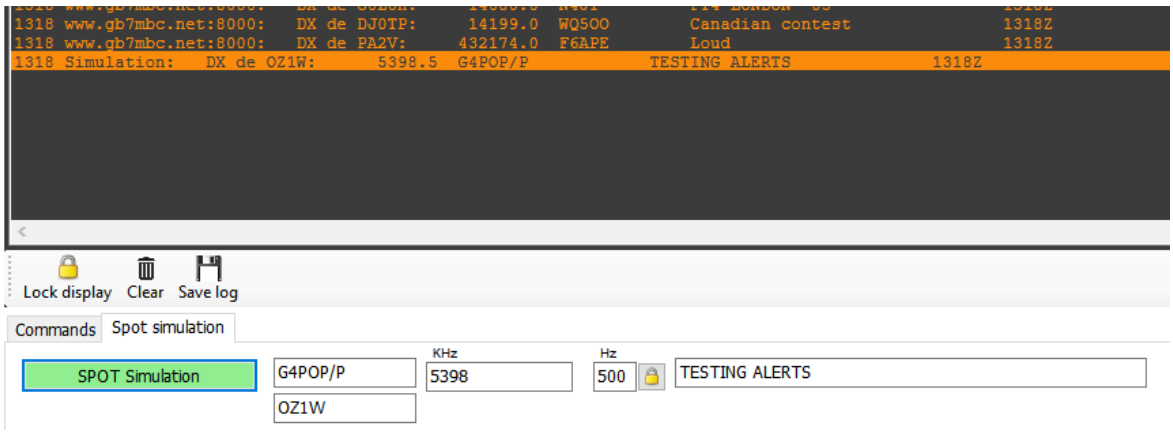
ALERT RULES are made with AND logic. All rules set must be matched (when multiple choices are available, like modes, bands, dxcc, at least one of them should be matched).

When using filters based on station statistics, for example a new country at least one of the fields must match



Testing alerts

To test an alert, use the 'Spot simulation' facility in the 'Cluster management' window - Spot simulations are not broadcast to the on air Telnet clusters, they are only displayed on the local PC



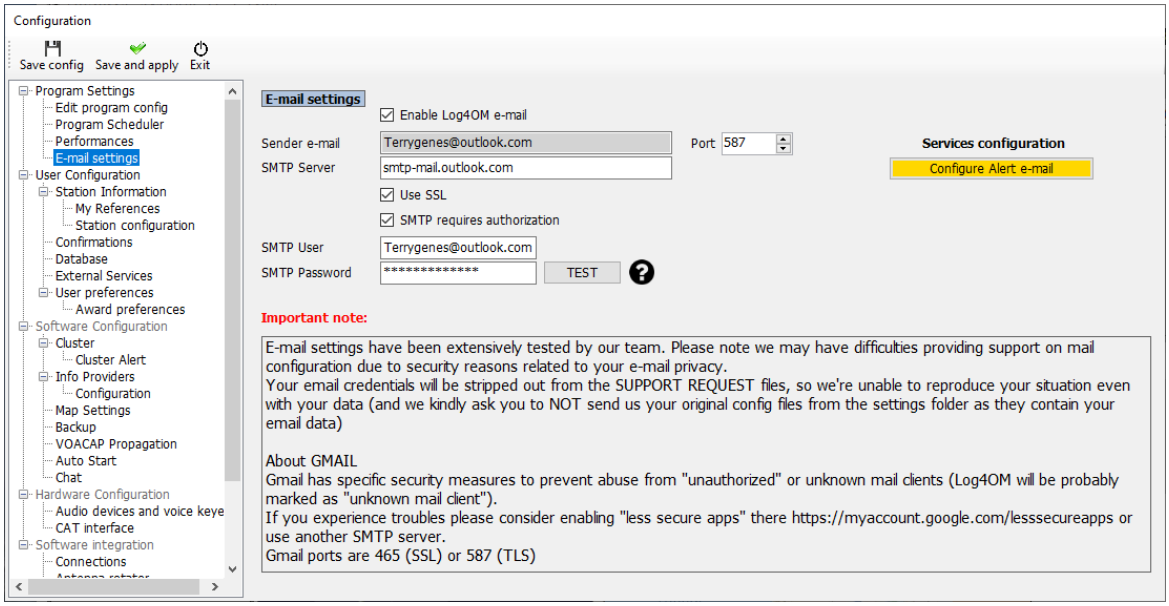
Cluster support for CW Keyer

If the Keyer interface is open then the actions for single and double click will send call sign, lookup data, band and mode data directly to the Keyer fields

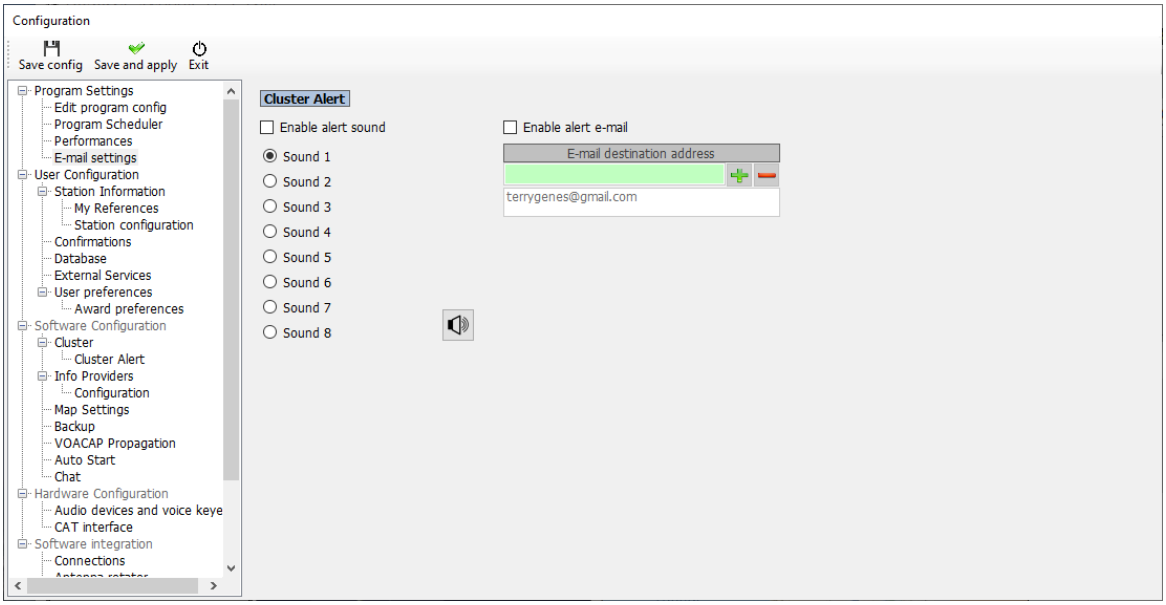
Email alert notifications

Email notification of cluster alerts can be automatically sent to the user if the interface is set up as follows.

1. Go to the Settings/Program configuration/e-mail settings menu.
2. Check the 'Enable email' check box.
3. Complete the email details for the outgoing email account.
4. Click on the 'Test' button which will result in an email being sent and confirmed.
5. Click 'Save config'
6. Click on the yellow 'Configure alert email' button which will transfer to the 'Cluster Alert' tab



7. Enter the destination address for email alerts in the green box.
8. Click on the green cross (+) to add it to the list below.
9. Click 'Save and apply'



Notes.

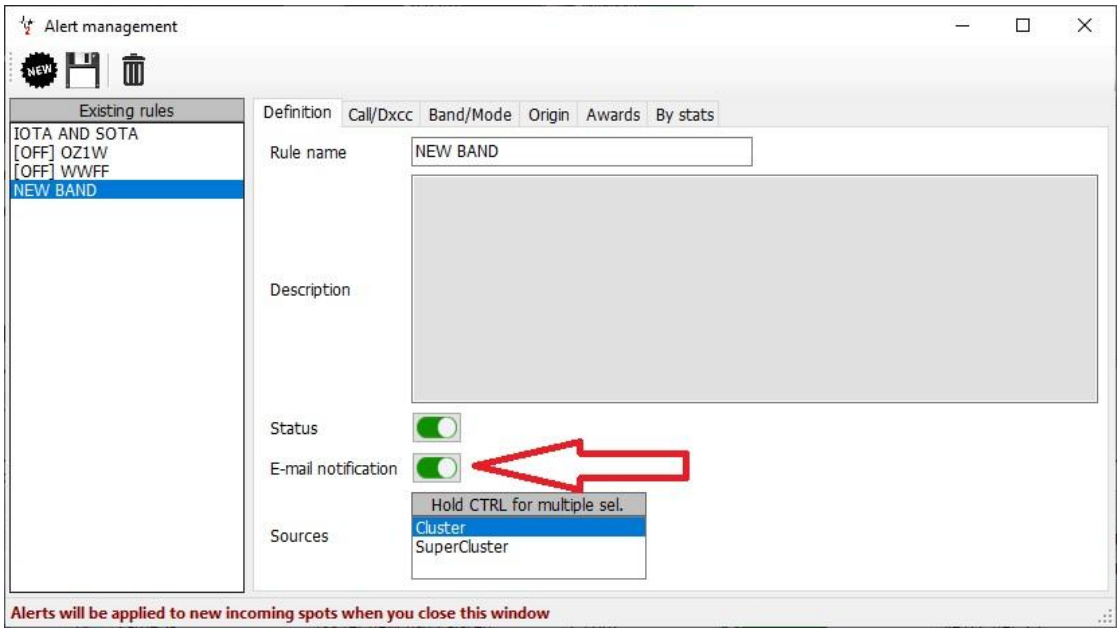
Email alerts may be forwarded to multiple email addresses

To remove email addresses from the list, highlight the address to be removed and click the red minus icon (-)

Audible alerts can be enabled and tested in this tab also.

Go to the ‘Settings/Alert configuration menu’.

- Select or construct the alert that e-mail notification is required for.
- Switch on the ‘E-Mail notification’ switch for the alerts to be actioned.



When an alert is triggered Log4OM will email notification of the alert by email as below.

Log4OM message START

New cluster alert generated at 04/03/2021 10:08:20 UTC (04/03/2021 10:08:20 local)

Triggered rules:
[OZ1W]

Callsign: OZ1W
Country: Denmark
Band: 80m
Emission type: PHONE

Log4OM message END

Propagation predictions

Log4OM version 2 includes a powerful propagation prediction tool based on VOACAP to calculate the best band/path between the users' station and the station to be contacted (Call sign must be entered in call sign field)

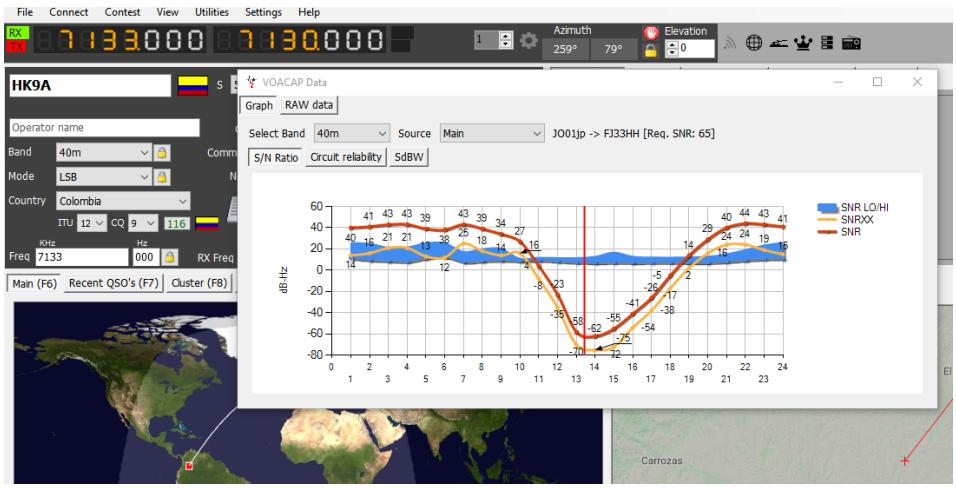
The tool is accessible either through the Propagation tab in the main UI or from the drop-down menus at the top of the main UI. To obtain a prediction is it necessary to enter the other stations call sign and band.

The predictions are calculated using the TX power level set in the Log4OM Settings/Program configuration/station configuration/TX Power field or as modified in the 'My Station (F4)' tab of the QSO input panel of the main UI. The antenna is not selectable and is based on a standard dipole.

Three views are available which display either S/N ratio, Circuit Reliability or SdBW, explanations of these displays can be found in the excellent document by *Jari Perkiömäki OH6BG* which is reproduced below.

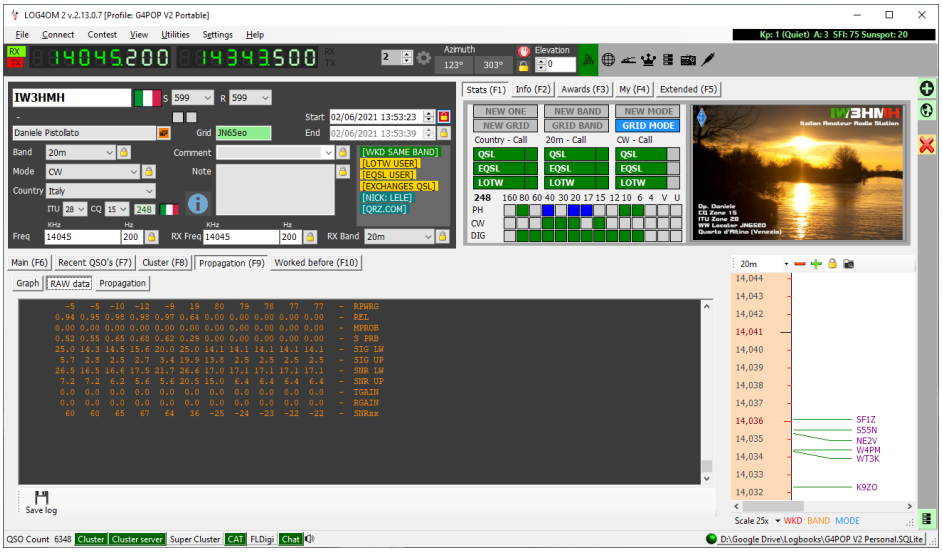
A separate window for propagation display is available from the view menu.

If the window is opened after the call is entered the calculations have already been done as a result the window will be empty. The window needs to be opened first so that when the call is entered it receives the results of the calculation.



The 'Source' menu in the floating Propagation window allows the display to also be derived from the call entered in the contest or keyer windows.

The raw data is also available in the tab 'Raw Data'

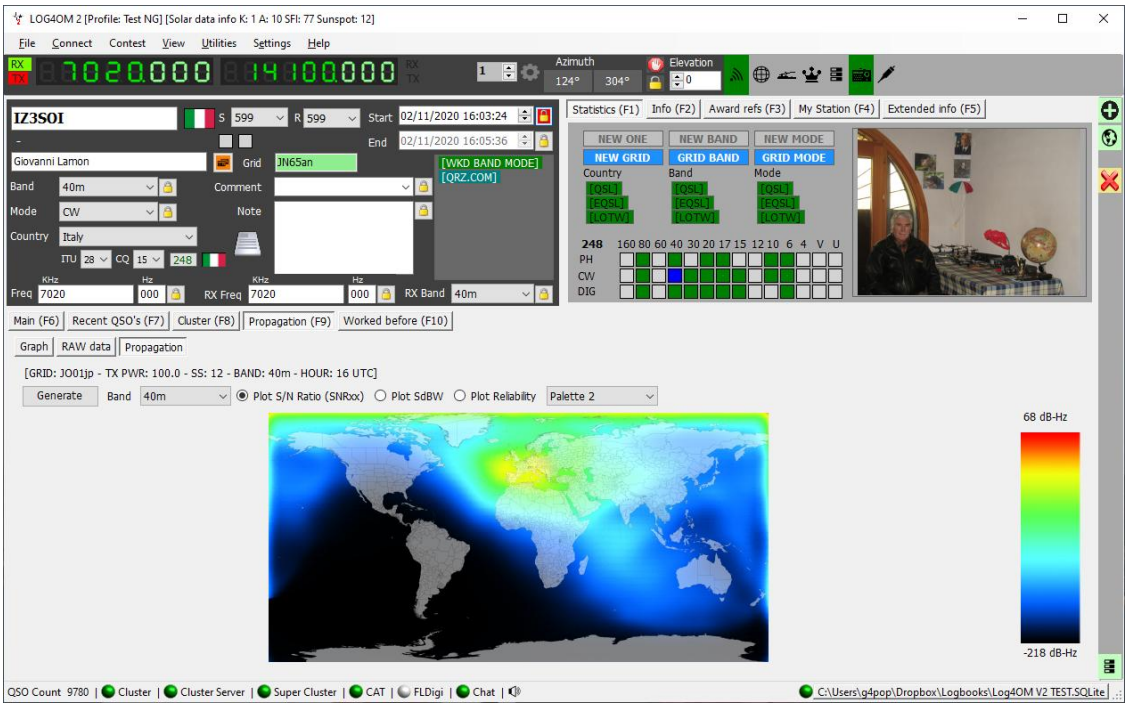


Propagation map

The propagation map that is also available from the 'View' menu or Propagation tab (F9) is not self generating from the call sign input because it takes time to calculate every grid square to be able to draw the map.

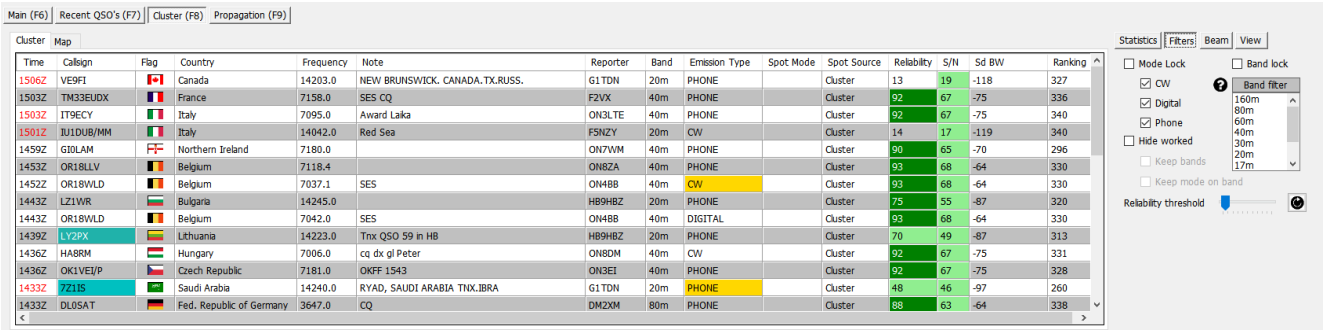
To activate

1. Select the band of interest
2. Select the data display type S/N Ratio, SdBW or Plot reliability
3. Choose the Map colour Palette
4. Click the 'Generate' button - As stated drawing the propagation map takes time so please wait!



Reliability column

A reliability factor is also displayed in a column of the cluster with the higher percentage of probability being progressively highlighted in a darker green, the Signal to noise ration and SdBW are also displayed.



Adjusting the 'Reliability threshold' slider in the 'Filters' menu will change the threshold at which the reliability levels will be displayed.

IMPORTANT NOTE

Because the 'Reliability' value in the cluster view is calculated on for 2 or 4 digit locator grid references for the centre of the country it will not match the refined propogation forecast in the 'Propogation (F9) tab which is calculated on the precise location of the station entered in the input fields and is calculated on the 6 digit locator obtained from the on line look up source.

The MUF and SNR Distribution

Choosing the Best Frequency

You have now run the prediction and are anxious to operate between the chosen locations on the frequencies you entered. There are two things to discuss in our analysis:

- What is the best of our frequencies?
- What is the predicted SNR (Signal-to-Noise) distribution on that frequency?

The Meaning of MUF

In VOACAP, the MUF (maximum usable frequency) is a statistical concept. The MUF is defined here as the median maximum usable frequency for a given ionospheric path, month, SSN and hour. On each day of the month at this hour, there is a maximum observed frequency (MOF) for a mode. The median of this distribution is called the MUF. Therefore, it is not the maximum usable frequency in terms of communications.

In other words, the MUF is the frequency for which ionospheric support is predicted on 50% of the days of the month, ie. 15 days out of 30 days. So on a given day communications may or may not succeed on the frequency marked as the MUF.

To ensure a good communication link between two locations, the operating frequency is typically chosen below the predicted MUF. It is often claimed that the optimal operating frequency lies somewhere between 80-90% of the MUF (e.g. if the MUF is 10 MHz, the optimal frequency would be around 8-9 MHz). However, in VOACAP it is the predicted SNR distribution using Complete System Performance methods (e.g. Methods 20, 21, 22 or 30) that determines which frequencies provide an acceptable grade of service

The MUFday

The MUF is also related to another parameter, MUFday. The value of the MUFday is the fraction of the days in a month at that hour that the operating frequency is below the MUF for the most reliable mode (that is, the mode with the highest reliability of meeting the required SNR). The mode and the associated data shown below the user-specified frequencies are always the most reliable mode. For a more detailed discussion, see Calculating MUFdays.

SNR, SNR10 and SNR90: The Predicted SNR Distribution

The SNR distribution tells us what grade of service is to be expected over the days in the month on a given frequency at a given hour. A statistical method is used to determine the grade of service over 27 days (SNR90), 15 days (SNR) and 3 days (SNR10) out of 30 days. However, it does not tell you which days are good or which days are bad.

Below are the four SNR output parameters needed for analysis:

```
1.0 13.1  6.1  7.2  9.7 11.9 13.7 15.4 17.7 21.6 25.9  0.0  0.0 FREQ
    F2F2 F2F2 F2F2 F2F2 F2F2 F2F2 F2F2 F2F2 F2F2 F2F2   -    -  MODE
      80   63   69   78   83   78   68   28  -39  -58   -    -  SNR
    26.7 12.4 13.8 21.2 26.7 26.8 26.8 26.8 26.8 13.3   -    -  SNR LW
    18.5  7.6  7.1  7.8 12.7 22.2 25.7 25.7 25.7  7.6   -    -  SNR UP
      54   51   55   57   56   51   41    1  -66  -71   -    -  SNRxx
```

The SNR indicates the dB-Hz value that can be maintained on 50% of the days (ie. on 15 days) in the month. In our example above on 11.9 MHz, the SNR value is 83 (dB-Hz).

The SNRxx (ie. SNR90, provided the REQ.REL. is 90%) indicates the dB-Hz value that can be maintained on 90% of the days (ie. on 27 days) in the month. In our example above on 11.9 MHz, the SNRxx value is 56 (dB-Hz). This can be calculated as SNR - SNR LW (or 83 - 27 = 56 in our example).

And finally, **the SNR10** (calculated as SNR + SNR UP) is the dB-Hz value that can be maintained on 10% of the days (ie. on 3 days) in the month. In our example above on 11.9 MHz, the SNR10 value is appr. 96 (dB-Hz).

The two most prominent parameters to consider in search of the best frequency are the SNR and SNR90 values. **As a rule of thumb, look for the highest SNR value and the highest SNR90 value**. Let us assume that the required SNR we wish to maintain in our circuit is 67 (not a good but still a reasonable listening quality in international broadcasting). We will see that the SNRxx is below 67 at all our frequencies which means none of them cannot maintain that grade of service on 27 days out of 30 days. Then we will need to look for the highest SNR. Of our frequencies, the best would be 11.9 MHz with the SNR value of 83.

Conclusion

In conclusion, 11.9 MHz is the best candidate for the operating frequency at 01 UTC during that month. 11.9 MHz is also below the predicted MUF of 13.1 MHz for that mode.

The RPWRG and the REL

Let us expand our example above by adding two other output parameters (RPWRG and REL) as follows:

```
   1.0 13.1  6.1  7.2  9.7 11.9 13.7 15.4 17.7 21.6 25.9  0.0  0.0 FREQ
       F2F2 F2F2 F2F2 F2F2 F2F2 F2F2 F2F2 F2F2 F2F2 F2F2   -    -  MODE
         80   63   69   78   83   78   68   28  -39  -58   -    -  SNR
         13   16   12   10   11   16   26   66  133  138   -    -  RPWRG
       0.74 0.24 0.57 0.74 0.78 0.70 0.51 0.03 0.00 0.00   -    -  REL
       26.7 12.4 13.8 21.2 26.7 26.8 26.8 26.8 26.8 13.3   -    -  SNR LW
       18.5  7.6  7.1  7.8 12.7 22.2 25.7 25.7 25.7  7.6   -    -  SNR UP
         54   51   55   57   56   51   41    1  -66  -71   -    -  SNRxx
```

The RPWRG is related to the SNR90 and REQ.SNR. In our example above, the REQ.SNR was set to 67 **(program config - user preferences)**.

The RPWRG (the required power gain) parameter tells us **how many decibels are needed in the communication system to achieve the SNR90 value of 67**. It is calculated as REQ.SNR - SNRxx (or 67 - 56 = 11 on 11.9 MHz). As the value of the RPWRG is positive in our example, it means that many decibels are needed for our system; if the value had been negative, that many decibels would have been in excess (ie. unnecessary) to achieve the required SNR for 27 days out of 30 days.

This parameter relates to the (communication) system design. In our example on 11.9 MHz, we should consider what measures we could take to add the necessary 11 desibels to the system: doubling the transmitting power would give us 3 desibels, using a more powerful transmitter antenna could give us a few desibels more, and at the receiving end we could choose, say, a 3-element Yagi instead of the whip antenna which would still contribute some more desibels.

The REL is related to the SNR and REQ.SNR, and is defined as a circuit reliability factor. It tells us the percentage of days in the month when the SNR value will equal to or exceed the REQ.SNR. The SNRxx tells us which SNR value can be achieved on 90% of the days (27 days) in the month. If the SNRxx would have been 67, then the value of REL had been 0.90 (or 90%, which is the REQ.REL. we have specified) and the RPWRG would have been zero (0).

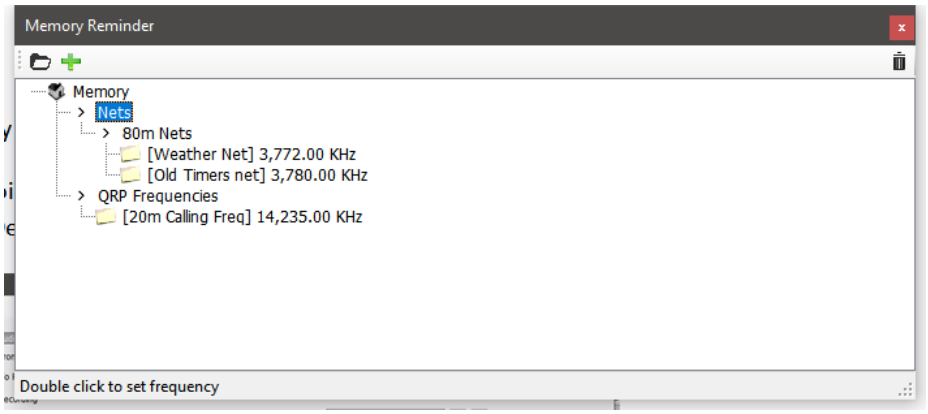
Conclusion

The REL value of 0.78 on 11.9 MHz suggests that the required SNR of 67 can be achieved on 78% of days in the month. To translate the percentage value to the number of days, take a look at the Z Tables. We will see that 78% equals to 23 days.

Originally written and copyrighted by Jari Perkiömäki OH6BG, https://www.voacap.com/muf.html

Memory reminder (Favourites)

In the view/Memory reminder window it is possible to save a list of often used frequencies (Favourites)



- Click the folder icon to add a folder, enter a folder name and click the enter/return key on the keyboard.
- Select the folder created and click the Green + button to add a frequency name and frequency, click the check mark icon to save the entry.

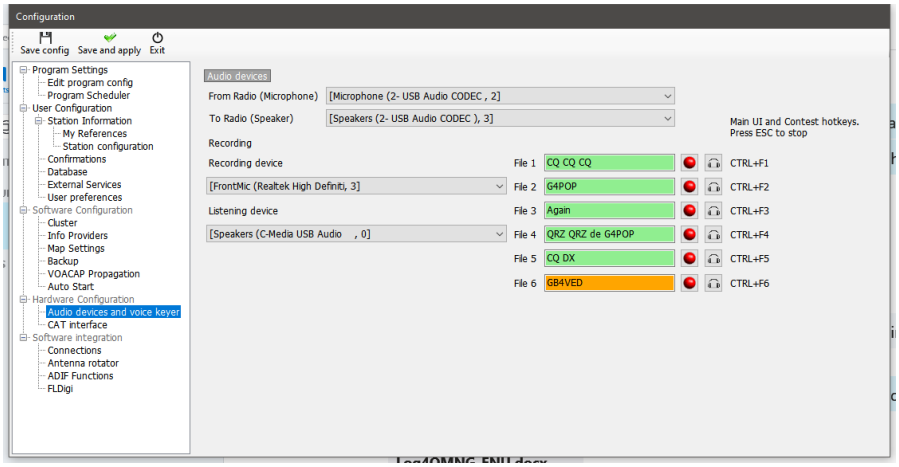
The mode is automatically selected according to the mode recorded for that frequency in the band plan file

Voice Keyer

Log4OM2 provides a voice keyer facility with six recordable memories.

Voice Keyer setup

To set up the voice keyer and record voice keyer messages open the Log4OM Program Configuration window from the 'Settings' menu and select the ‘Audio Devices’ tab.



1. Select the devices to be used for the transmission of the keyer messages in the ‘From/To Radio’ drop down menu’s
2. Choose the recording and playback devices in the ‘Recording’ panel
3. Provide a ‘File name’ for each memory.
   Note: Until a recording is completed the file name box will be highlighted Red.
4. Hold down the red button to the right of a memory name and record a message using a microphone connected to the computer – At the end of the recording release the red record button.
   Note: The file name box will change to green to indicate that it contains a message.
5. Click on the headphone symbol to the right of the recording button to playback the recording for that memory.

Voice Keyer in use

- The voice keyer messages are triggered by Ctrl + Function keys 1 to 6
- When a message is being sent there is a visual indication at the bottom of the main UI

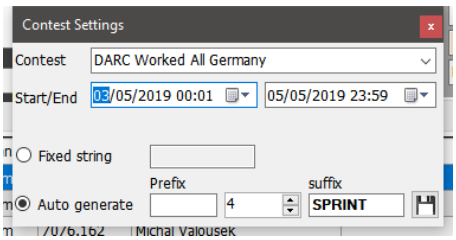
- Messages can be aborted during sending by pressing the keyboard key 'Esc'
- Messages can be sent either when the main UI is active, or the contest window is open

Contest mode

Although not a fully featured contest logger Log4OM V2 provides a very useful interface for the casual contester. The dedicated contester should use the Log4OM V2 integration with N1MM for best efficiency.

Contest setup.

- Select 'Contest/contest settings'.



- Select the appropriate contest.
- Adjust the start and end dates and times.
- Add any fixed string, Prefix or suffix for the contest.
- Set the serial number to the required start number.
- Click on the save icon at lower right (Floppy disk)
- Close the Contest settings window.

Contest operating.

If the dates set in the 'Contest settings' menu are not current then contest mode cannot be enabled!

- Start the contest display by selecting 'Contest/contest' from the menu bar or by clicking on the Contest icon (Crown) in the main toolbar.

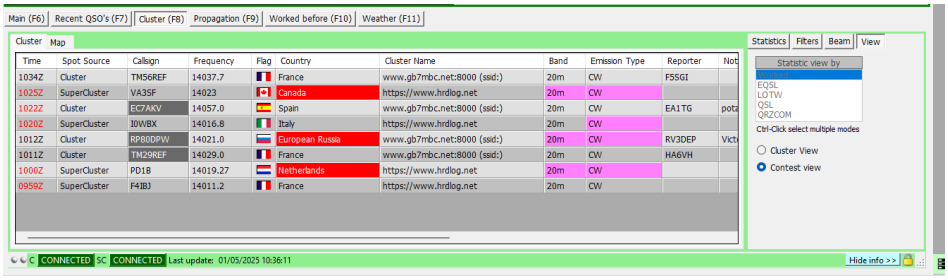
- The list of stations worked during the contest period is shown at the bottom of the window.
- If any station has been worked before [Dupe - WKD SAME BAND] appears in the information window.
- The serial number is incremented automatically and is displayed together with any prefix or suffix at the top of the window.
- The user's aerial and radio specifications can be changed by selecting from the 'My (F4)' Tab.
- The radio in current use can be changed by the rig selection list beside the frequency display for SO2R operation.

Contest Cluster view.

During a contest, cluster servers and online lookup services are under extreme pressure due to the volume of lookups and spots which can slow Log4OM down. There is also no requirement to check if countries and modes were worked in the past, only countries/bands/modes not worked during the contest period are of interest.

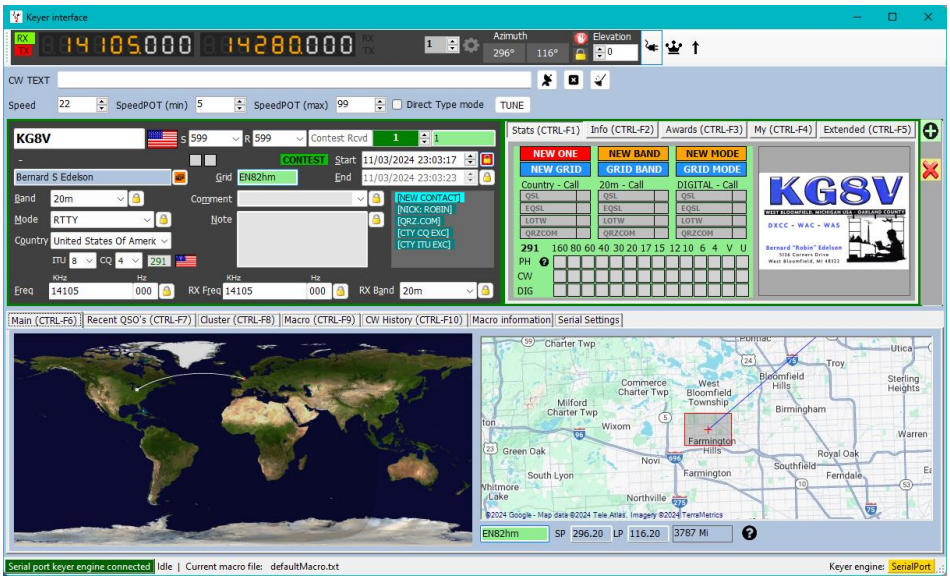
Log4OM therefore provides a contest mode for the cluster which disables those unnecessary functions providing a contest focused cluster display.

To engage the contest cluster display, the user should select a contest and enter contest mode, then in the cluster control window select ‘View’ and check the ‘Contest view’ button as below.



Contesting with CW Keyer

When in contest mode the CW Keyer is also in contest mode and provides the same contest sent and received fields as in the main contest window.



Select a set of contest macros from the 'Macro (CTRL+F9) tab and start the keyer as described in the keyer section of this user guide. Keyboard operation for maximum QSO speed s also supported in contest mode.

CW Macros

A full list of available macro fields is shown in the 'Macro information' tab, including the Contest received number <CONT_RX> and 'Contest sent number' <CONT_TX>

Main (CTRL-F6) | Recent QSO's (CTRL-F7) | Cluster (CTRL-F8) | Macro (CTRL-F9) | CW History (CTRL-F10) | Macro information | Serial Settings

<MY_CALL> or *	My callsign
<CALL> or !	Counterpart callsign (from keyer screen)
<STRX>	RST received (from keyer form) with 9 replaced by N
<STTX>	RST sent (from keyer form) with 9 replaced by N
<STRXF>	RST received (from keyer form) as it's logged
<STTXF>	RST sent (from keyer form) as it's logged
<NAME> or <MY_NAME>	My name
<COUNTRY>	My country
<GRID>	My gridsquare
<MY_IOTA>	My IOTA ref
<MY_SOTA>	My SOTA ref
<MY_OPCALL>	My operator call
<MY_QTH>	My QTH
<MY_ANTENNA>	My Antenna (as currently selected in main UI)
<MY_RIG>	My rig (as currently selected in main UI)
<HIS_NAME>	Counterpart name
<n>	Repeat the whole string n times (Must be between 2 and 10). Can be placed anywhere in the string.
<CONT_RX>	In contest mode: contest received number
<CONT_TX>	In contest mode: contest sent number
<TEMP_C>	Current temperature in CELSIUS
<TEMP_F>	Current temperature in FAHRENHEIT
<WIND_DIR>	Current wind direction in degrees
<WIND_SPD_KMH>	Current wind speed in Km/h
<WIND_SPD_KTS>	Current wind speed in knots
<WIND_SPD_MS>	Current wind speed in meters per second
<CUR_WEATHER>	Current weather phenomena
<CUR_CLOUDS>	Current cloud coverage

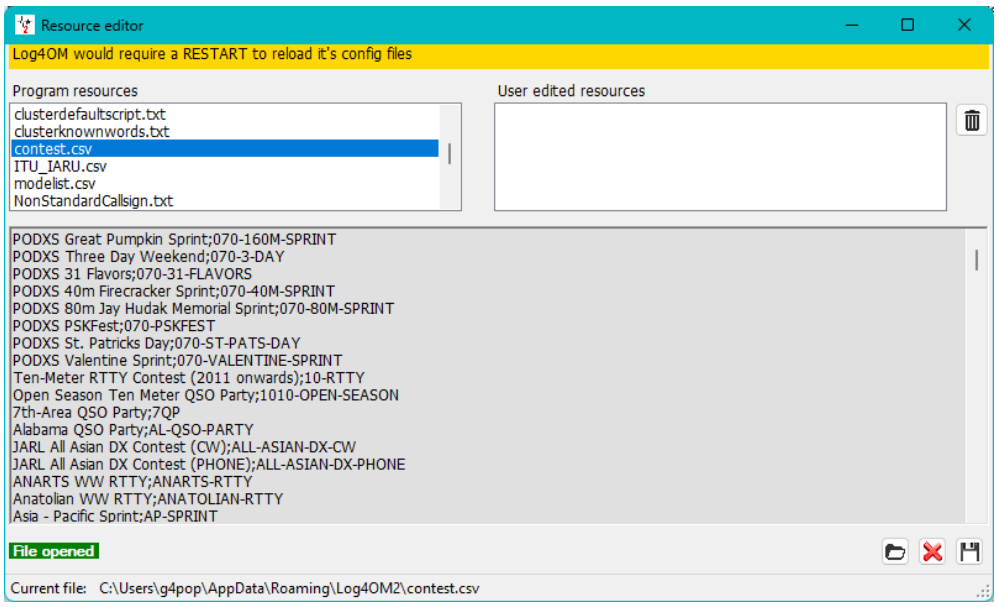
Adding a contest name

To add a contest name to the list, edit the contest.csv file in Settings/resources editor.

Ensure that the contest name and the contest organiser are separated by a semi-colon.

e.g. ARRL RTTY Round-Up;ARRL-RTTY

Note: Save the edit by clicking the small floppy disc icon at the bottom right corner of the resources window.



CW Keyer - Setup

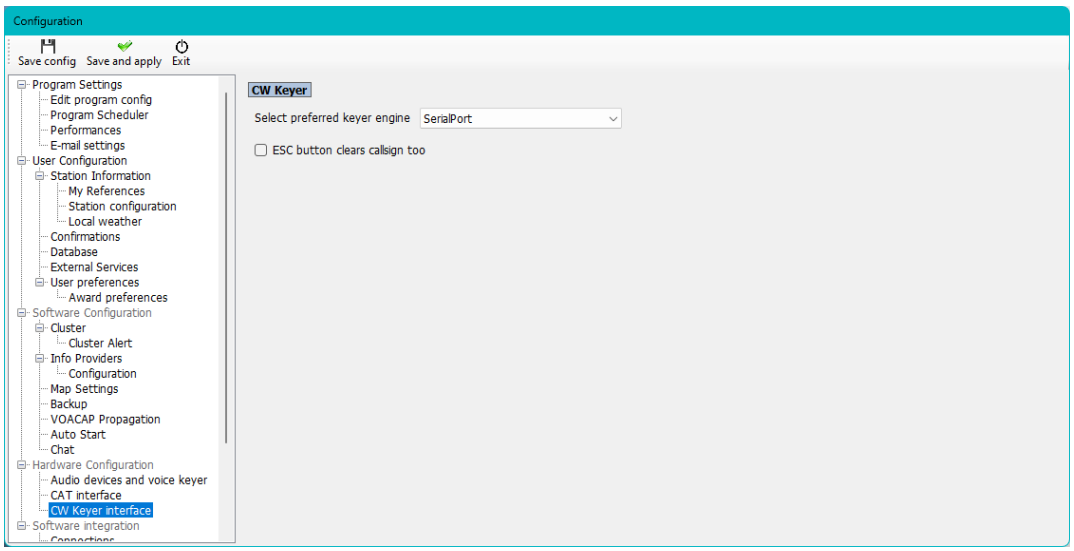
There are three methods of using CW with Log4OM

1. Use a Winkeyer interface (or a Winkeyer clone)
2. Using 'Com port keying' with a simple interface
3. TCI connection for radios like the SunSDR, Anan etc

Set keyer type and key function

In Program config/CW Keyer Interface

1. Select the type of keyer engine to be used (Winkeyer/TCI/Serial)
2. Set function of the 'Esc' button
   Unchecked - Esc deletes TX string only
   Checked - deletes TX String and Call info



All three connection methods are listed below, but once connected the functionality of the Log4OM CW Keyer window is common to all connection types.

Winkeyer Instructions

PLEASE NOTE

Winkeyer is a hardware unit designed by K1EL https://www.hamcrafters2.com/ there are also other derivatives.

To use the Winkeyer support in Log4OM the user MUST have a Winkeyer hardware unit connected between the PC and the Radio.

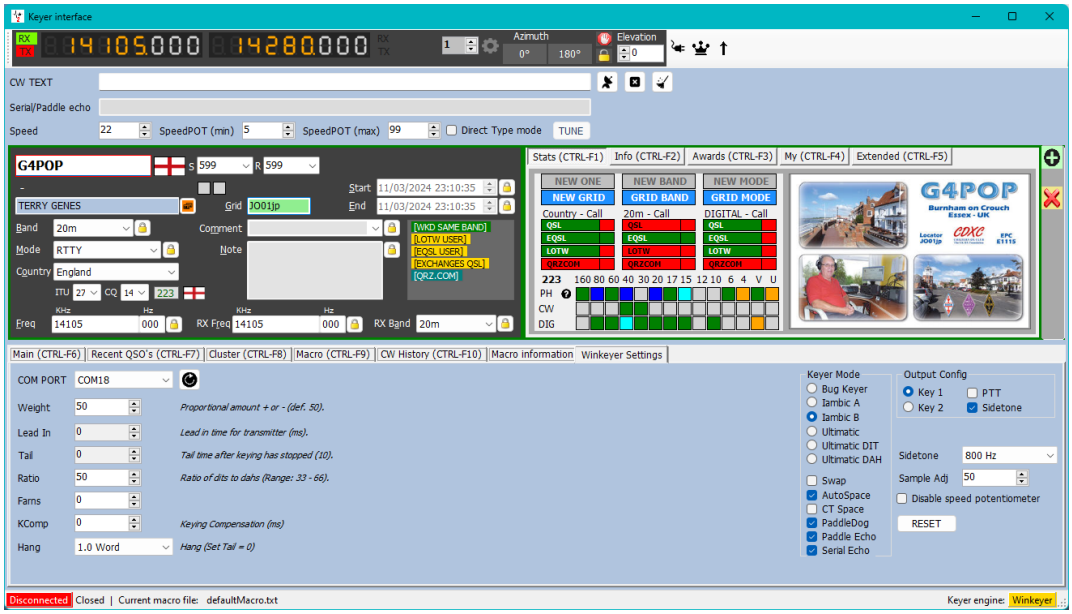
Alternatively use a Winkeyer port emulation software like that provided by FlexRadio and SunSDR TCI, if using a Winkeyer Port emulator please consult the relevant user guide.

The Winkeyer interface can be opened either by selecting CW keyer from the 'View' menu or by clicking the Morse key icon in the top toolbar.

The Winkeyer interface is not compatible with old versions of Winkeyer only the USB versions will integrate.

Winkeyer Settings

All Winkeyer settings can be changed in the ‘WK Settings’ tab and this is where the Winkeyer USB port should be selected.

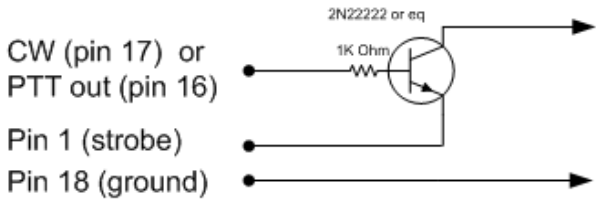


Com Port Keying Instructions

Log4OM provides support for CW keying via a com port providing a suitable CW morse code keying interface cable is attached to the PC.

Interface

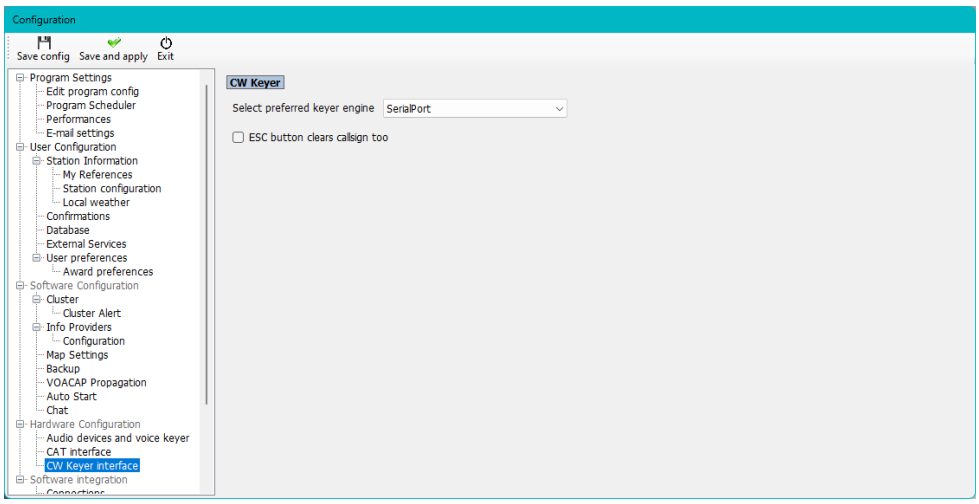
Suitable cables are available on the internet, a reccommended source is Technofix UK, or the user can easily construct on as in the diagram below.



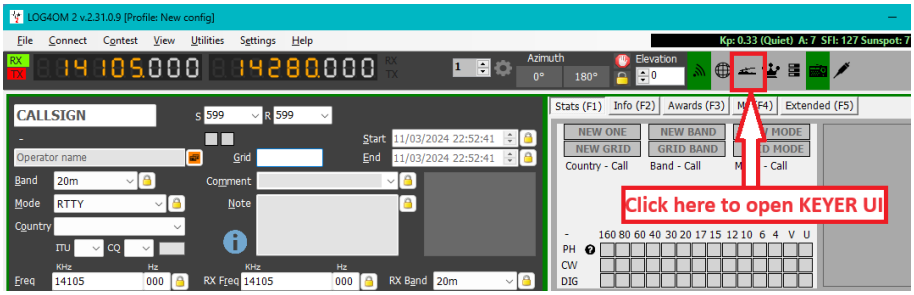
By curtosy of N1MM

Setting up

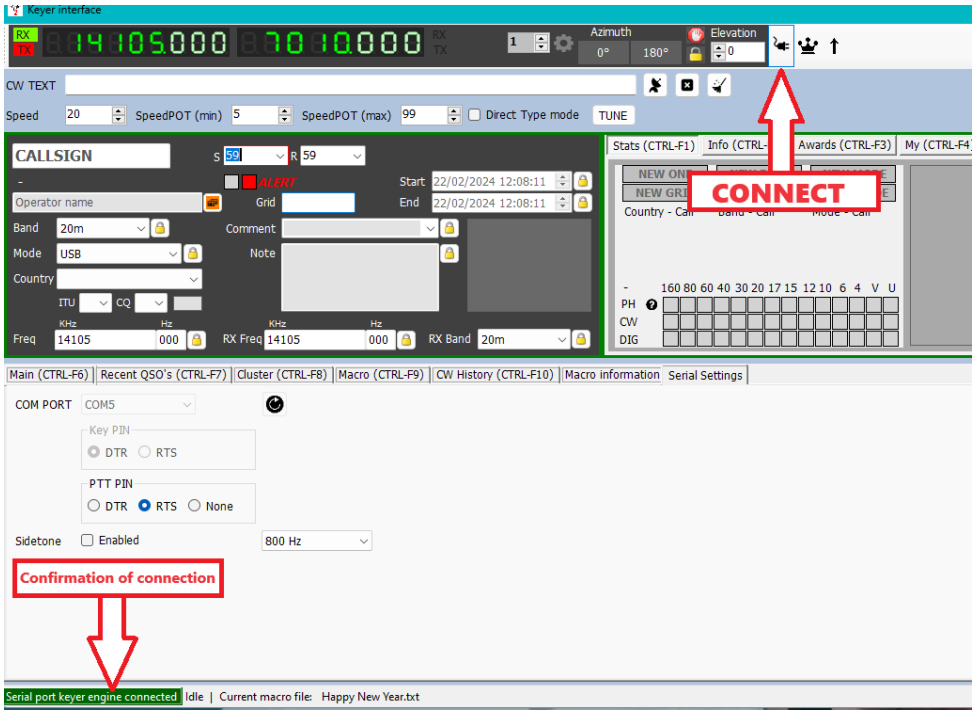
In the Log4OM Program Configuration menu select CW Keyer interface and keyer engine ‘Serial Port’ as below, click ‘Save and apply.



Open the CW Keyer interface by clicking the ‘Morse key’ icon in the main UI window and select the ‘Serial settings’ tab.

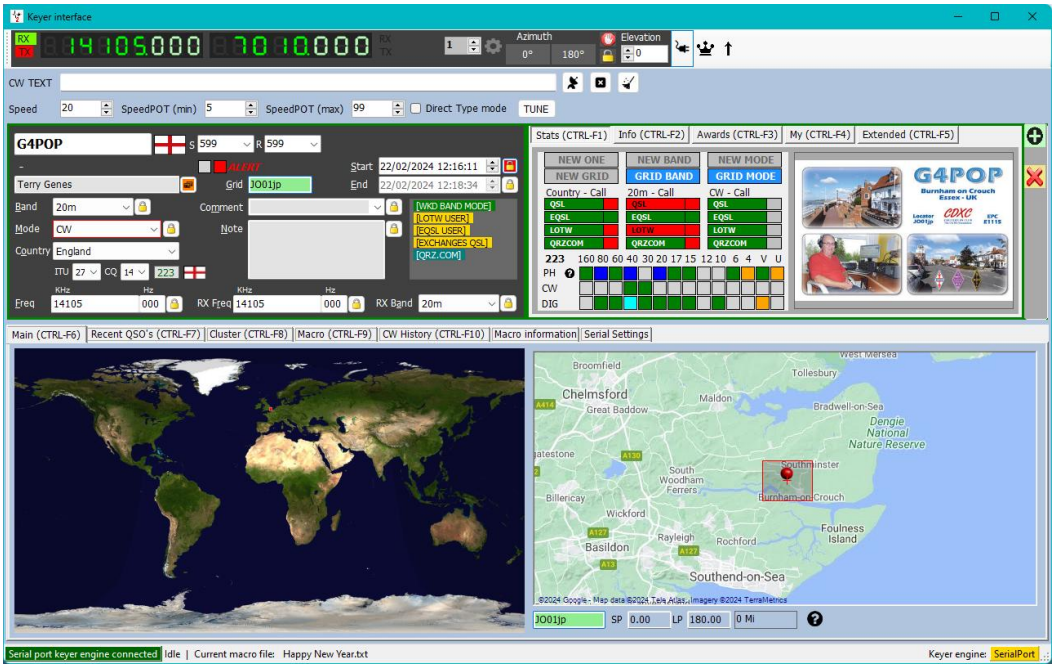


In ‘Serial settings’ tab of the keyer window select the com port to which the CW keyer interface cable is connected and set the Key pin and PTT Pin settings to match the connected radio. (The illustration below is the setting for the Icom IC7100)



Click the connect icon on the tool bar (Cable with plug) and the confirmation of connection in the bottom left window frame should turn green.

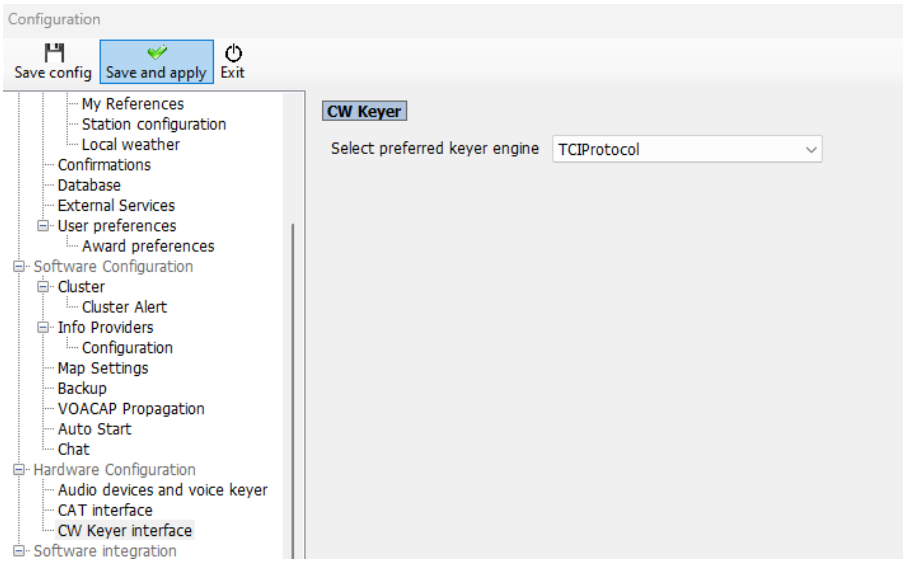
Please refer to the information below for an explanation of the functionality of the keyer and its macros.



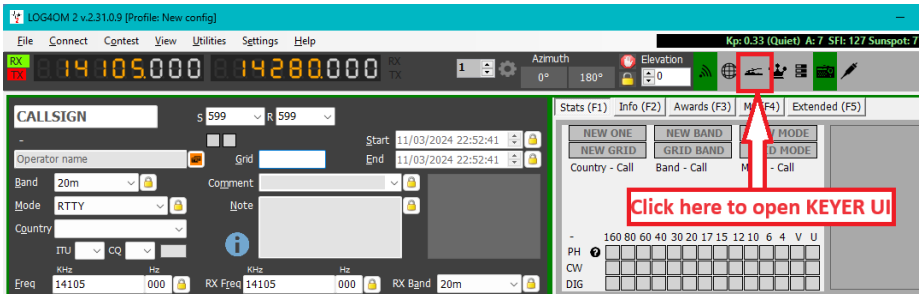
TCI CW implementation

Log4oM fully supports EESDR 3.0 for the SunSDR radios and other software that utilises the TCI protocol developed by Expert Electronics.

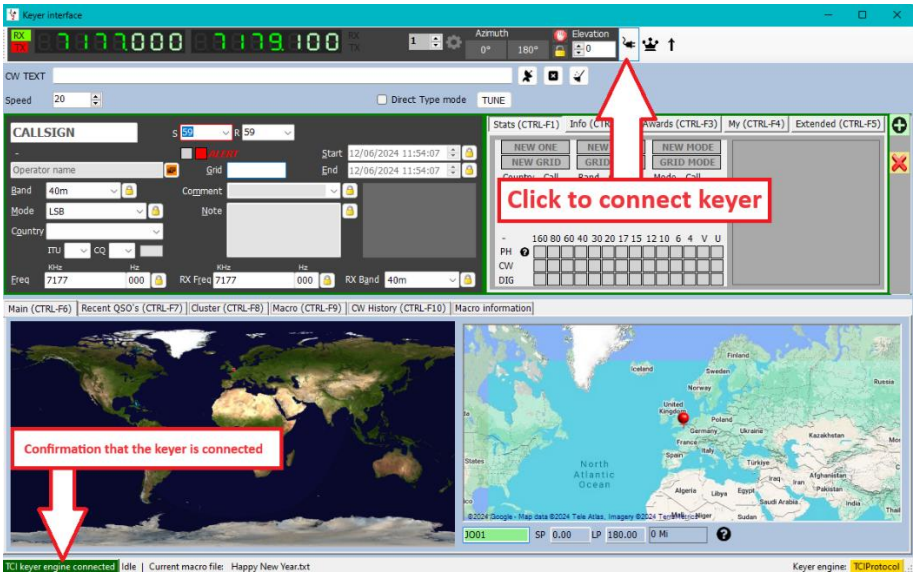
In the Settings/program config/CW Keyer interface menu, select ‘TCI Protocol’ as the CW keyer – Click ‘Save and apply’

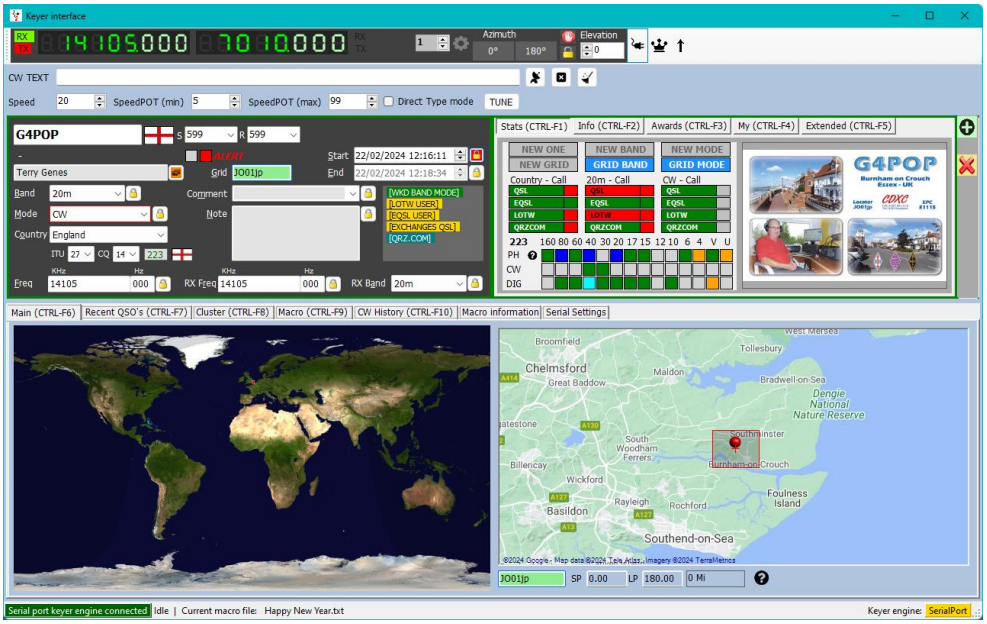


Open the CW Keyer interface by clicking the ‘Morse key’ icon in the main UI window.



Click the connect icon on the tool bar (Cable with plug) and the confirmation of connection in the bottom left window frame should turn green.





Providing Log4OM has been configured for TCI control of the radio then all CW functions including macros will work.

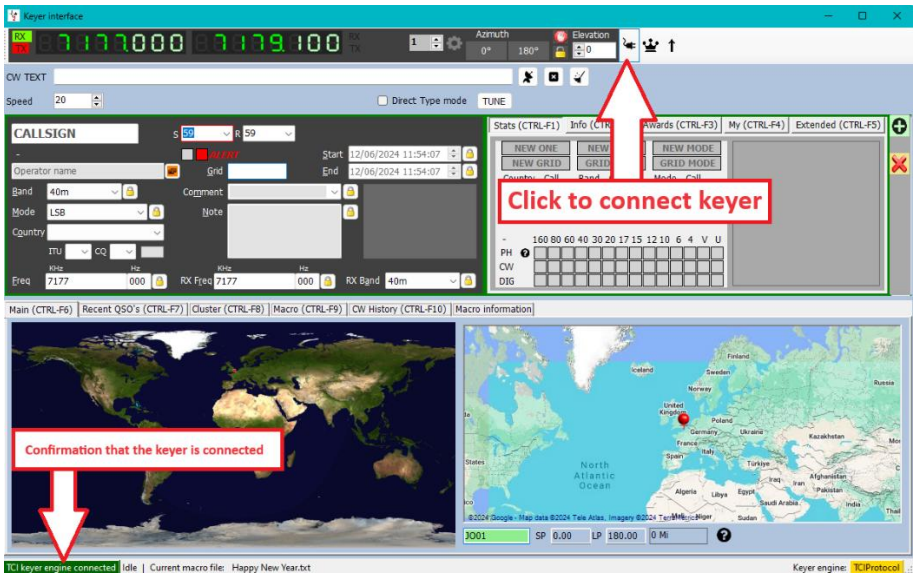
Please refer to the information below for an explanation of the functionality of the keyer and its macros.

CW Keyer In use

Starting & stopping the keyer

Once the connection method has been selected (Winkeyer, Com Port or TCI) the keyer can be started by clicking the connect icon next to the frequency display (Looks like a mains lead)

The connection details will be highlighted green at the bottom left corner of the keyer window.

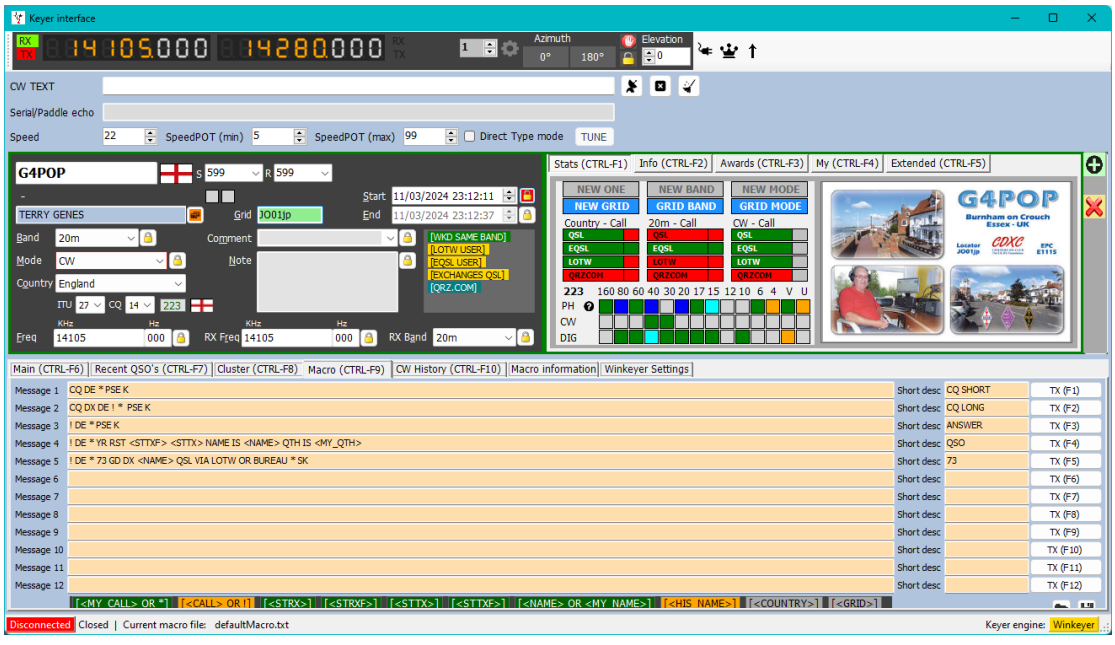


After use the keyer must be disconnected by clicking the connect icon again before the keyer window is closed.

Log4OM V2 keyer support is designed for keyboard operation to enable high speed operation in contest or DX Expedition conditions, the mouse can also be used but this will be slower and more cumbersome.

Function Keys F1 - F12 - Activate user macros as constructed or edited in the Macros (Alt 2) tab.

An unlimited number of macro sets (Each set contains 12 macros) can be saved by using the floppy disk icon at the lower right of the Macro (Alt 2) tab and recalled by clicking the arrow at the lower right of the Macro (Alt 2) tab.



Call and QSO data entry

The cursor defaults to the Call sign field, when a call sign is entered a lookup is done as described elsewhere, the WB4 status is shown in the data lookup pane at the bottom of the WK window.

Tabbing out of the call sign field automatically records the QSO start time. The user can now tab through all of the other entry fields and enter or edit the data as required.

Ctrl -Enter - Saves the QSO to the logbook and records the end time of the QSO and clears the entered date and positions the cursor back into the call sign field ready for the next QSO.

Alt-W - Clears the data entered.

Keyboard sending

In addition to the macros it is possible to send CW messages by typing into the 'Text input' filed at the top of the WK window, checking the 'Direct type mode' box will cause the text will be sent as its entered.

Alternatively, with the 'Direct type mode' box unchecked text will not be sent until the 'SEND' button is pressed or the keyboard shortcut **Alt-S** is pressed

Alt-A - Clears the text in the input field.

Cluster support for CW Keyer

When the keyer interface is open then the actions for single and double click on a cluster spot will send the spotted call sign, band, and mode data directly to the keyer fields.

Double click on last message resends that message

CW keyer Hotkey list

Function Keys F1 - F12 - Activates user macros
Ctrl-A - Clears the text in the Text input field and aborts transmission
Ctrl-Enter - Saves the QSO to the logbook
Ctrl-W - Clears all data entered
Ctrl-S - Sends text in direct type Text input field
Esc - Clears the call sign and lookup data
Tab - Advances the cursor to the next field
Double mouse click - Double clicking on the last message sent, Re-sends message

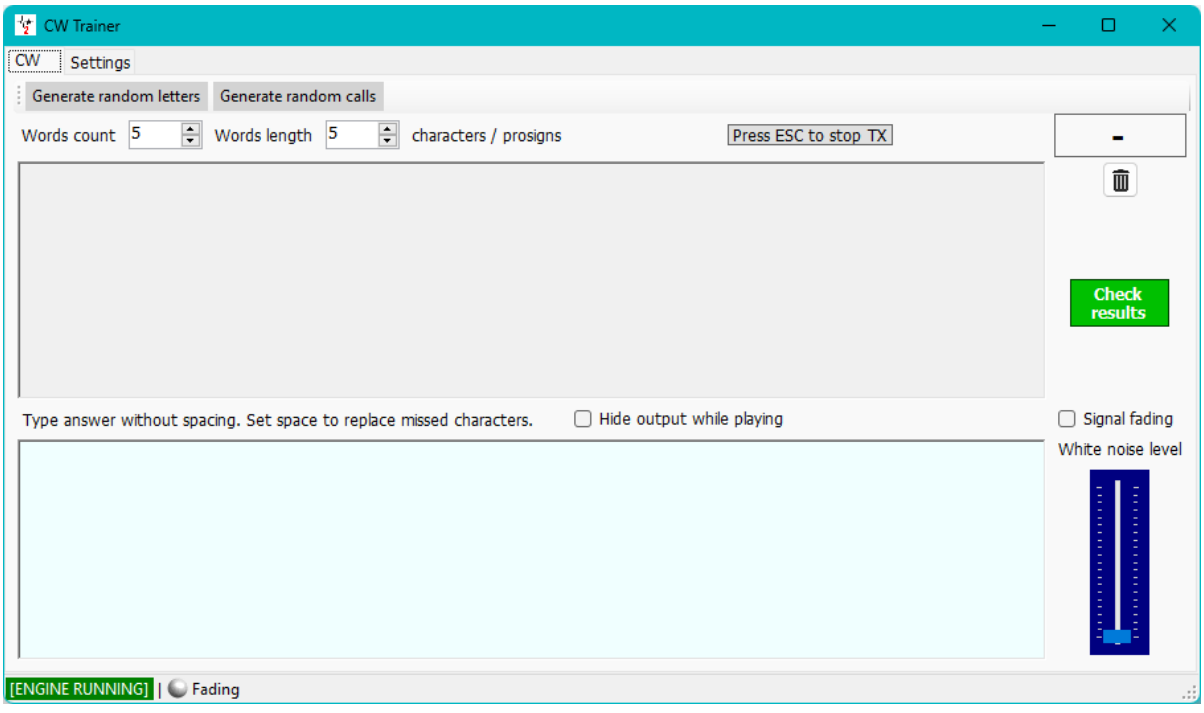
CW Macro List

Main (CTRL-F6) | Recent QSO's (CTRL-F7) | Cluster (CTRL-F8) | Macro (CTRL-F9) | CW History (CTRL-F10) | Macro information | Serial Settings

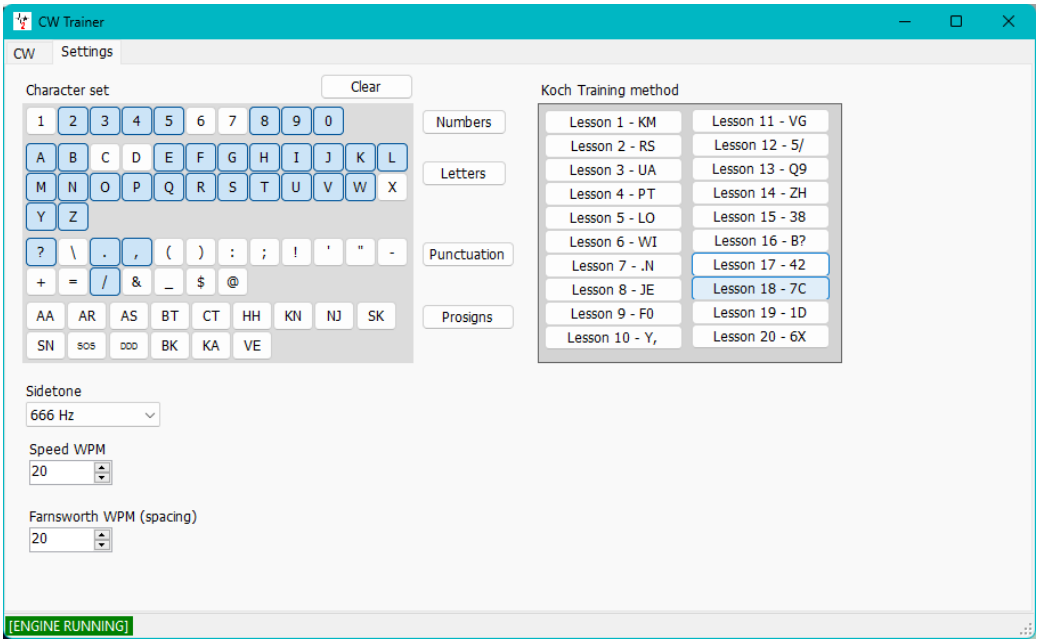
<MY_CALL> or *	My callsign
<CALL> or !	Counterpart callsign (from keyer screen)
<STRX>	RST received (from keyer form) with 9 replaced by N
<STTX>	RST sent (from keyer form) with 9 replaced by N
<STRXF>	RST received (from keyer form) as it's logged
<STTXF>	RST sent (from keyer form) as it's logged
<NAME> or <MY_NAME>	My name
<COUNTRY>	My country
<GRID>	My gridsquare
<MY_IOTA>	My IOTA ref
<MY_SOTA>	My SOTA ref
<MY_OPCALL>	My operator call
<MY_QTH>	My QTH
<MY_ANTENNA>	My Antenna (as currently selected in main UI)
<MY_RIG>	My rig (as currently selected in main UI)
<HIS_NAME>	Counterpart name
<n>	Repeat the whole string n times (Must be between 2 and 10). Can be placed anywhere in the string.
<CONT_RX>	In contest mode: contest received number
<CONT_TX>	In contest mode: contest sent number
<TEMP_C>	Current temperature in CELSIUS
<TEMP_F>	Current temperature in FAHRENHEIT
<WIND_DIR>	Current wind direction in degrees
<WIND_SPD_KMH>	Current wind speed in Km/h
<WIND_SPD_KTS>	Current wind speed in knots
<WIND_SPD_MS>	Current wind speed in meters per second
<CUR_WEATHER>	Current weather phenomena
<CUR_CLOUDS>	Current cloud coverage

CW Trainer

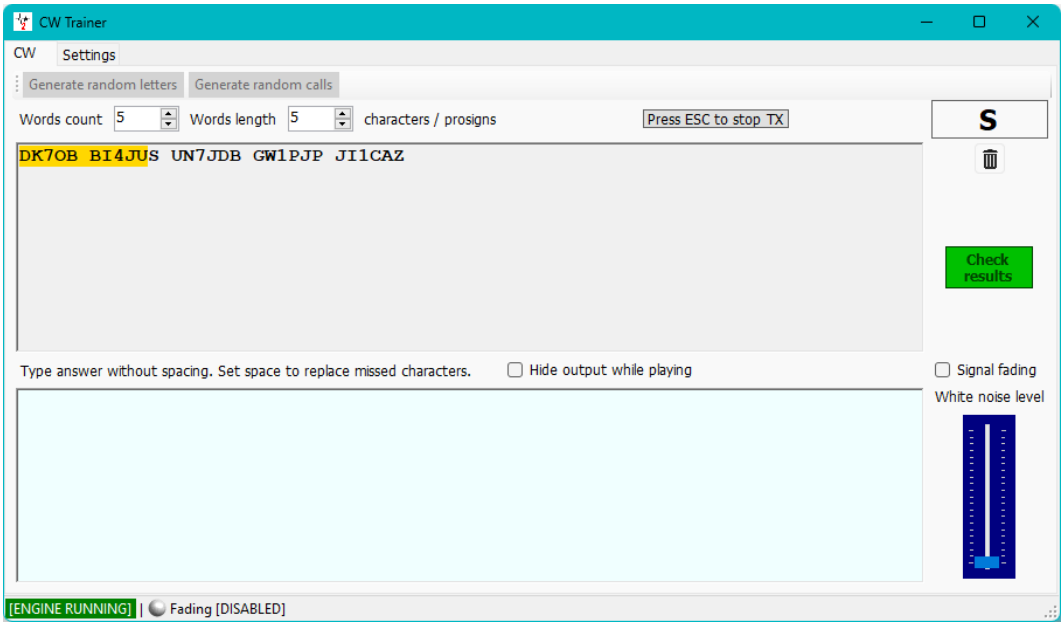
Provision is made for those users learning or trying to improve their CW by inclusion of a CW trainer – Go to Utilities/CW Trainer.



In the CW tab it is possible to set the trainer to send random groups of letters or call signs while typing what was heard in the lower window – the keyboard 'Esc' key stops the sending.

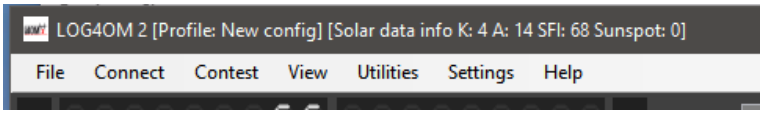


The settings tab provides a choice of manually selecting letters, numbers, punctuation or prosign's. Alternatively, the user can select one of the Koch training lessons.

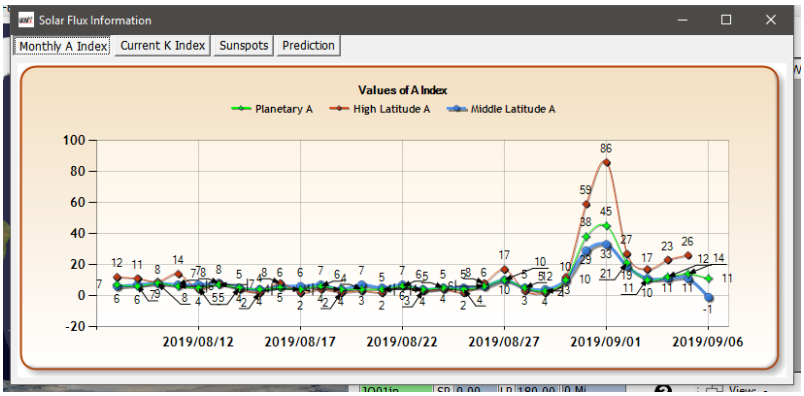


Solar Data

The solar Geomagnetic data information is regularly updated from NOAA and basic information is displayed on the top frame of Log4OM, displaying K & A index values, the current SFI and number of sunspots

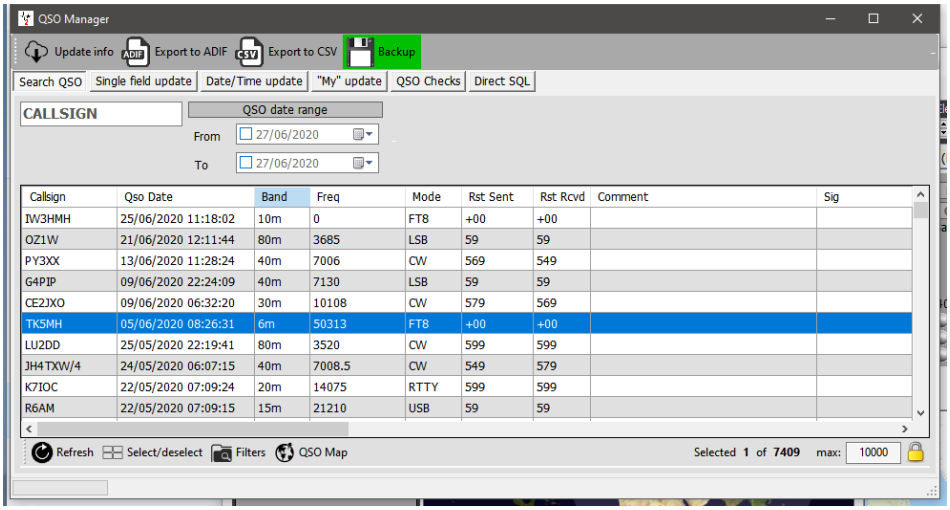


More detailed solar data including historic information is available in the View/Solar data dialog which displays the Monthly A Index, Current K index, Sunspots and a sunspot Prediction graph.



QSO Manager

Complete management of QSO data is achieved in the QSO Manager (Utilities/QSO Manager) which can be searched by call sign and date range using the quick search dialogs at the top of the window.



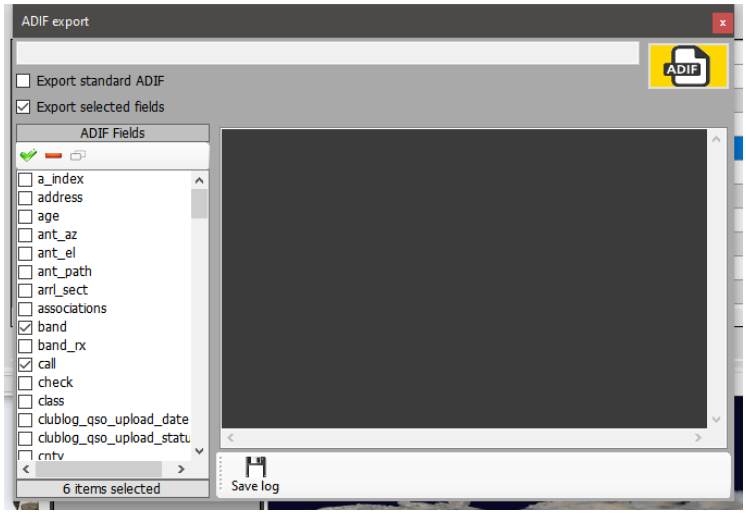
THE USER IS ADVISED TO BACKUP LOGBOOK DATA BEFORE EDITING

Update Info

This button at the top left side of screen, updates the selected QSO(s) using the on-line search facilities selected by the user in the program configuration and the Clublog Historic data file, Log4OM country and special call lists.

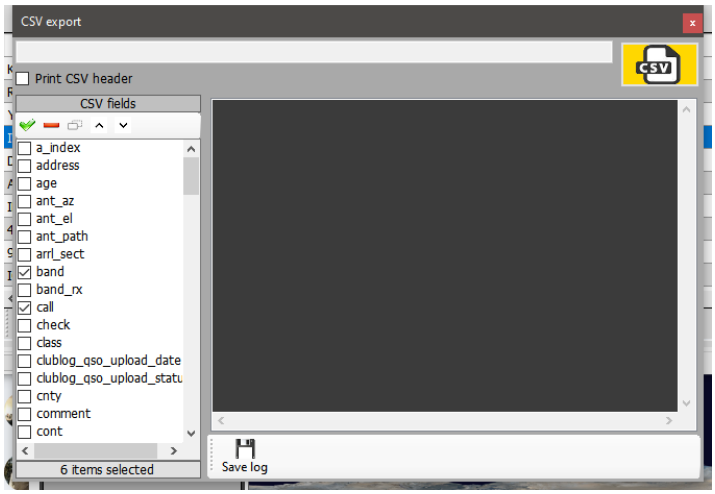
Export to ADIF

This button at the top of the screen, exports the selected QSO(s) to an ADIF file using the latest version of the ADIF format available. The users choice of fields can be exported by user selection or alternatively a standard ADIF file may be generated.



Export to CSV

This option allows export of the select QSO's with the users choice of fields to be exported and the choice of exporting a header in CSV format



Backup Button

The backup button will save a FULL backup of the user's logbook to a location of the users choice

Refresh button

The 'Refresh' button at the bottom left side of screen, updates/refreshes the items displayed in the grid.

Select/Deselect

Located at the bottom of the screen this button either selects all of the entries displayed or deselects the entries displayed/selected by alternate clicks.

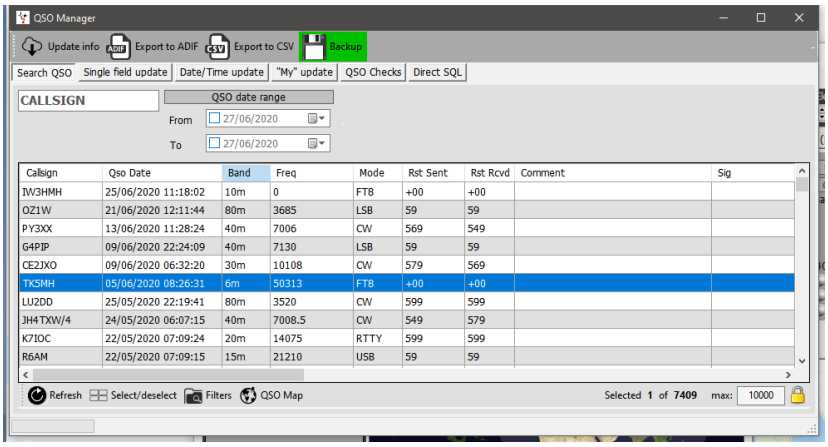
Bulk updates

All fields can be updated in bulk by using the various update tabs in the QSO manager having first selected the QSO's for update in the 'Search QSO' tab

First filter and select the QSO(s) to be bulk edited then click the 'Refresh' button at the bottom of the main pane.

Search QSO

This tab enables the operator to search and select the QSO/QSO's to be edited by using the 'Filter' menu at the bottom of the window and then selecting the QSO's either by mouse click, shift/click or ctrl/click or to select all click on the 'Select/deselect' button at the bottom.



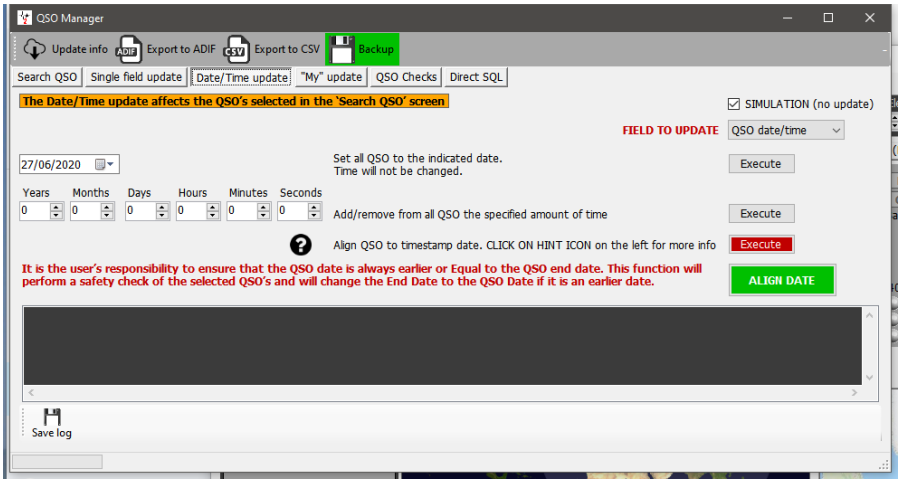
Update Single field

Select the field for update and enter a value, then click the 'Update' button

Date/Time update

Date

The date of the selected QSO's may be bulk edited by selecting the correct date from the calendar field and clicking 'Execute' this will not change the recorded time.



Time

The time of selected QSO's may be edited by adjusting the values plus/minus and clicking on the 'Execute' button.

Align QSO time to Timestamp

This should not be used in conjunction with QSO's imported from an ADIF file, please read the warning note by clicking on the Question mark (?)

Align End time with start time

The QSO end date can be aligned with the start date by clicking the Green button

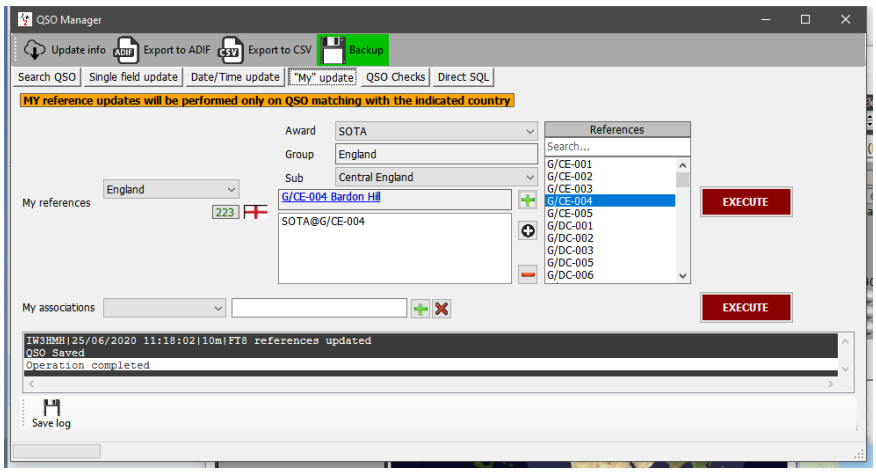
Simulation

All of the above actions may be simulated before actioning by using the Simulation check , which is set to 'Simulation' by default for safety reasons.

My Update

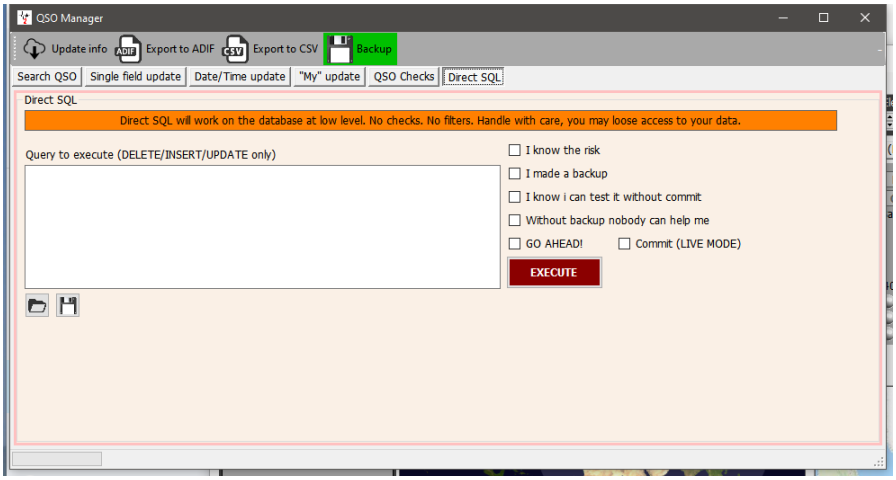
This tab provides an opportunity to bulk update the users references e.g. IOTA, SOTA, WWFF etc and associations e.g. Fists, ten ten etc

1. Select the reference area in the My Reference drop down menu
2. Select the award type in the 'Award' menu e.g. SOTA, WWFF, POTA etc
3. Choose the reference and add it to the reference list
4. Click execute to update



Direct SQL updates

Alternatively, the advanced user can use the Direct SQL method of updating but this should be used with caution and a BACKUP is essential before updating.



To prevent accidental updates the series of check boxes on the right must all be checked, the 'Execute' can then be clicked to do the SQL updates

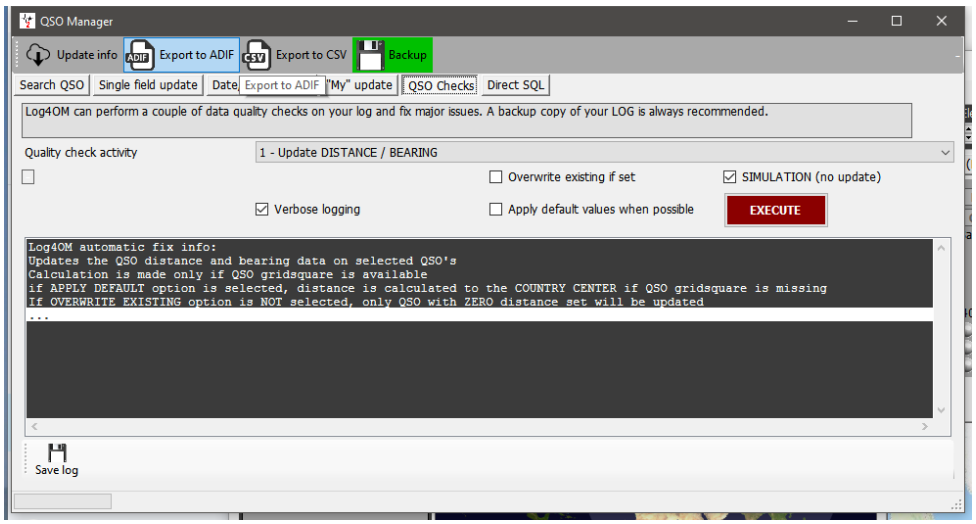
Save and Load SQL queries

The two icons at the lower left enable SQL Queries to be saved and recovered for future use.

QSO Checks

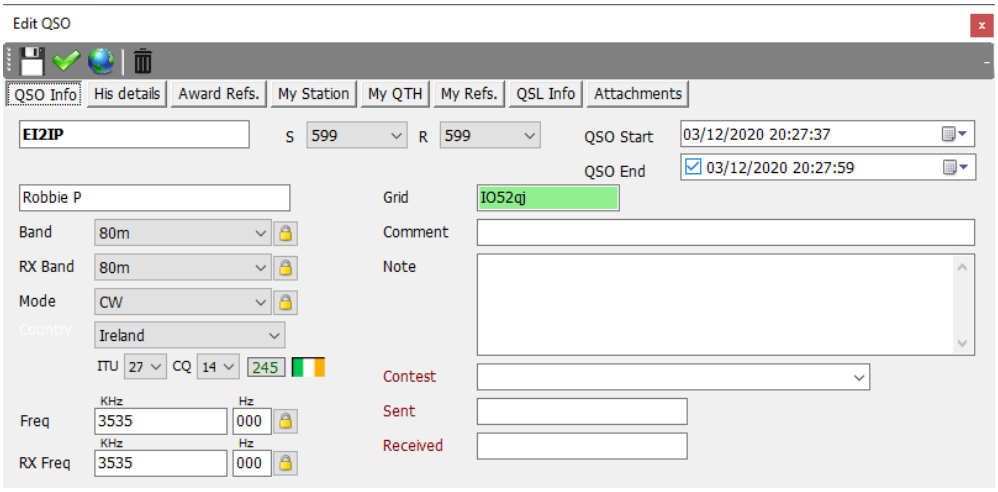
Several automatic updates and checks can be facilitated in this tab e.g.

1. Update Distance and bearing
2. Update My Callsign/Operator/Owner as set in the current profile
3. Update My Associations as set in the current profile
4. Update My Country/address as set in the current profile (This always overwrites existing data)
5. Update My Grid Square as set in the current profile
6. Update TX Band from QSO frequency
7. Fix state value to correct format
8. Update using external sources if DXCC is unknown
9. Set Pro-Mode to Sat on all satellite QSO's
10. Update country name, continent, CQ and ITU zone list according to QSO DXCC



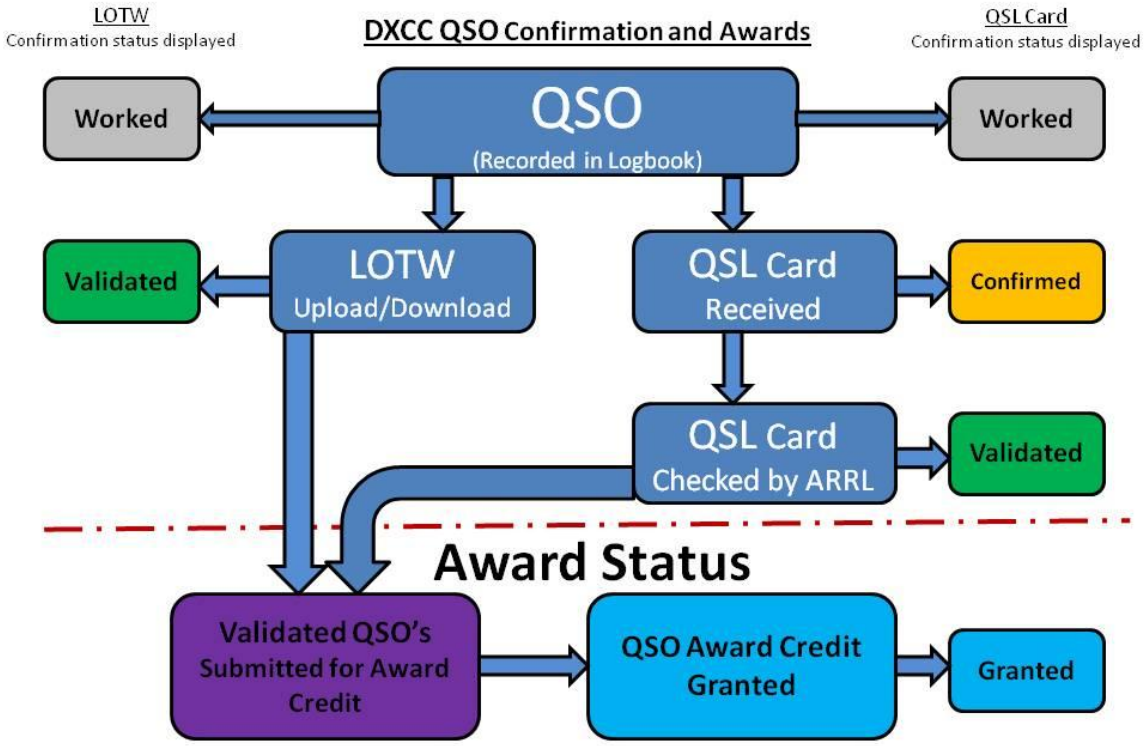
Editing a QSO

Double clicking or right clicking a QSO and selecting 'Edit' will open the editing window for the QSO



QSL Management for DXCC awards

To better understand the way QSO confirmations are used in DXCC awards this flow chart takes the QSO from initiation to award claim and credit.



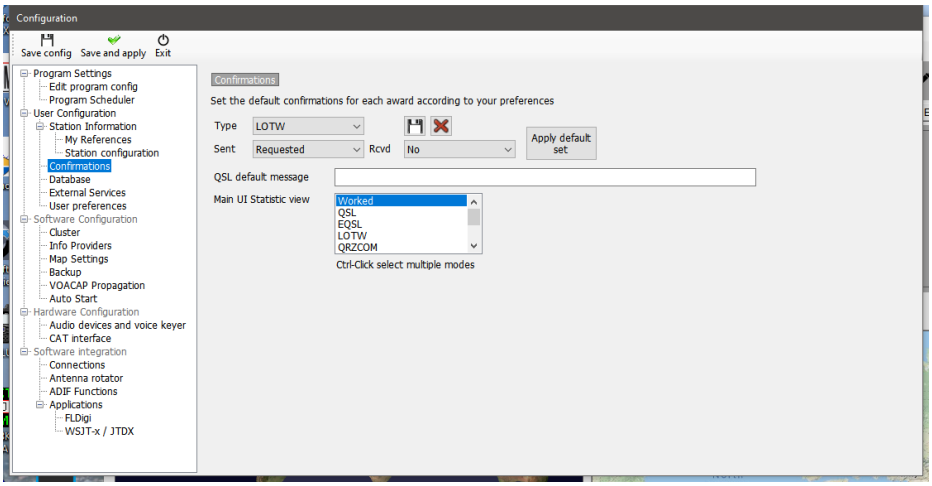
QSO Confirmations

QSO confirmations for Paper QSL's eQSL's, QRZ, HRDLog, LOTW, Clublog etc are all managed by the 'QSL Manager' located in the 'utilities' menu.

Outbound and inbound QSO confirmations by QSL Card, eQSL, LOTW and QRZ.com. HamQTH, HRDLog & Clublog online logs do not provide a method of automatically retrieving data, downloading can only be done by a manual download followed by manual import of the ADIF files

QSO selection for confirmations

As a QSO is saved (Logged) it is marked in accordance with the user settings selected in the settings/program configuration/confirmations tab.



Each type of confirmation can be set separately with one of the following ADIF choices for both sent and received status.

Confirmation Sent status

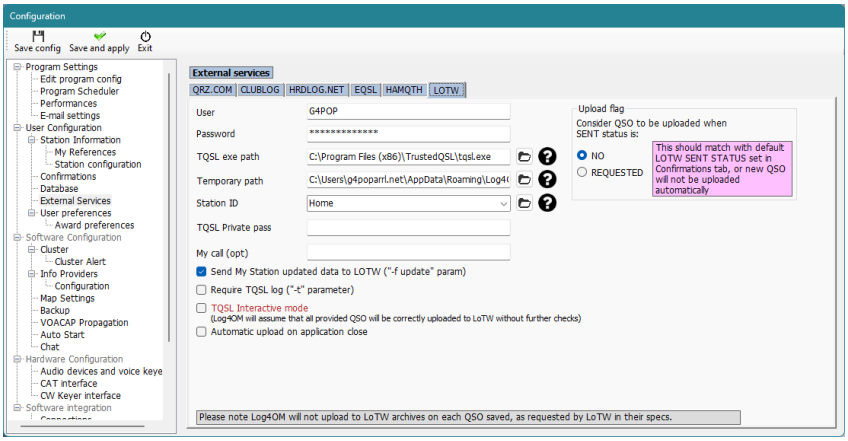
Status	Meaning	Description
Y	yes	• an outgoing QSL card has been sent • the QSO has been uploaded to, and accepted by, the online service
N	no	• do not send an outgoing QSL card • do not upload the QSO to the online service • The outgoing confirmation has not been sent
R	requested	• the contacted station has requested a QSL card • the contacted station has requested the QSO be uploaded to the online service
Q	queued	• an outgoing QSL card has been selected to be sent • a QSO has been selected to be uploaded to the online service
I	ignore or invalid	

Confirmation Received status

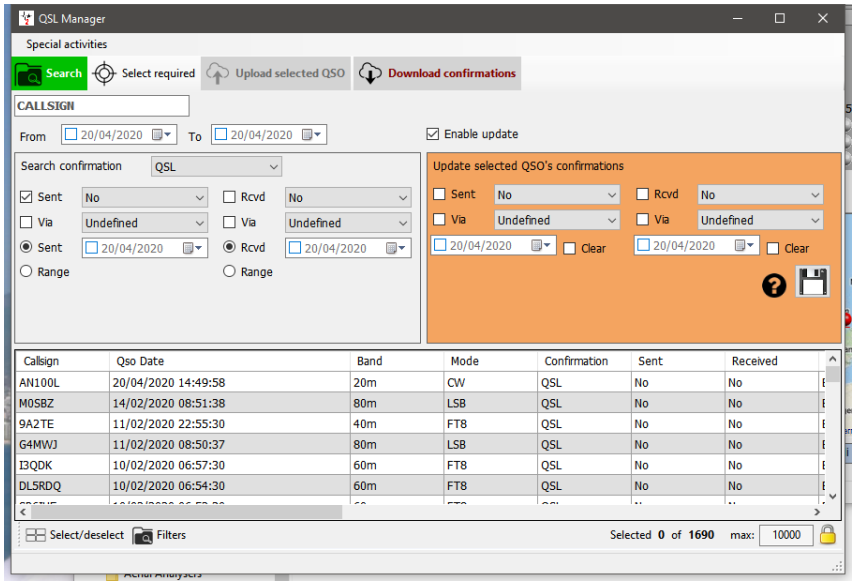
Status	Meaning	Description
Y	yes (confirmed)	• an incoming QSL card has been received • the QSO has been confirmed by the online service
N	no	• an incoming QSL card has not been received • the QSO has not been confirmed by the online service
R	requested	• the logging station has requested a QSL card • the logging station has requested the QSO be uploaded to the online service
I	ignore or invalid	

Selecting QSO's

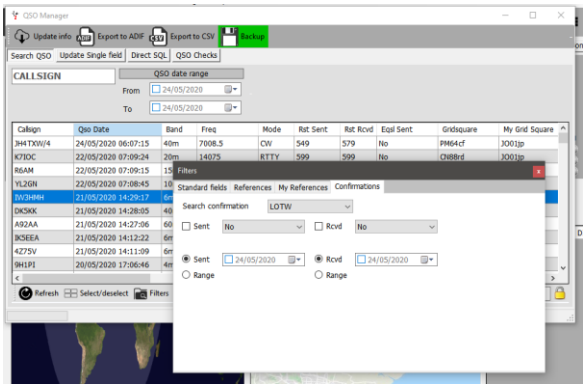
Selecting QSO's 'Sent status' for uploading to LOTW is done in the settings/program configuration/external services tab and should coincide with the confirmation settings detailed above.



It is also possible to select QSO's by the sent or received status in the QSL manager



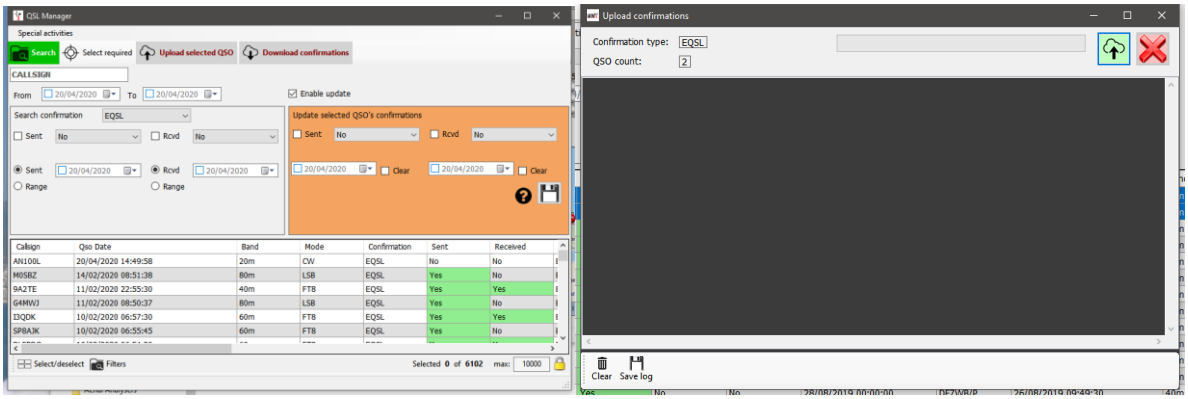
Users can also search and sort on the confirmation status in the QSO Manager/Filters/Confirmations tab and the recent QSO's/filters/confirmations tab



Automatic upload of confirmations in real time as the QSO is entered is achieved as detailed in the section 'QSO automatic upload to online logs'

QSO manual upload to online logs

- Select the type of confirmation in the 'Search confirmation' menu
- Select the QSO's to be uploaded or click 'Select required'
- Click the 'Upload selected QSO's' button at the top of the QSL manager window
- Click the green 'Upload' button in the resulting upload screen

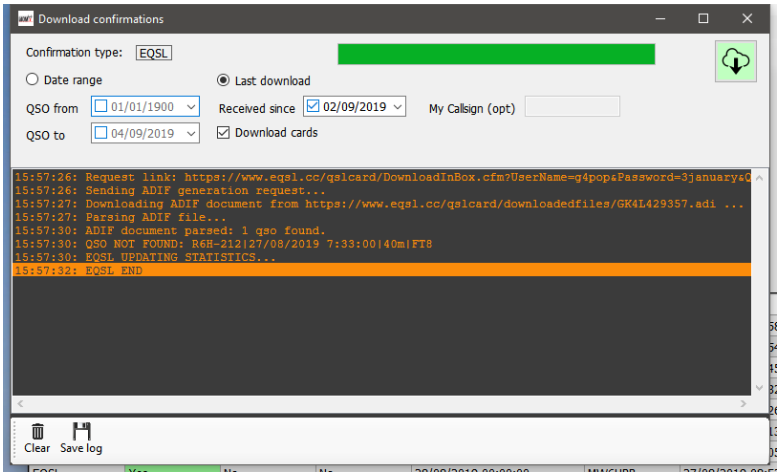


An upload of the complete logbook to Clublog is possible by selecting **'Special activities'** at the top of the QSL Manager screen which will purge all existing records held for the user at Clublog and replace them with the uploaded records - **Use with caution!**

Download QSO confirmations

To download confirmations from eQSL

- Select eQSL from the 'Search Confirmation' menu
- Click the 'Download confirmations' button at the top of the window
- Select either a date range or from the 'Last download' received date
- In the case of eQSL check the box 'Download cards' if records of the eQSL cards are required
- Click the green 'Download' arrow at the top right corner of the window

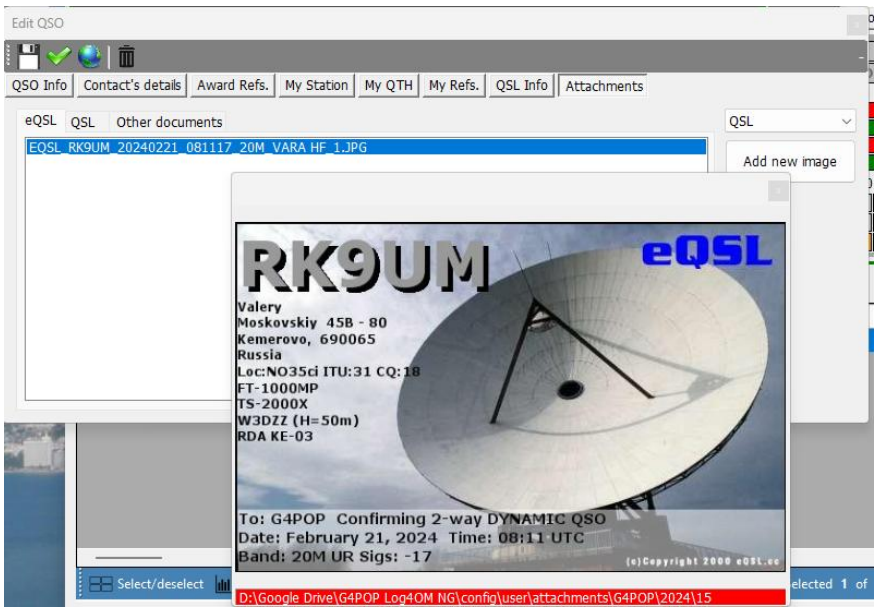


A progress and results report is displayed in the main section of the download screen and can be saved by clicking on the floppy disk 'Save' icon at the bottom left corner.

Viewing EQSL cards

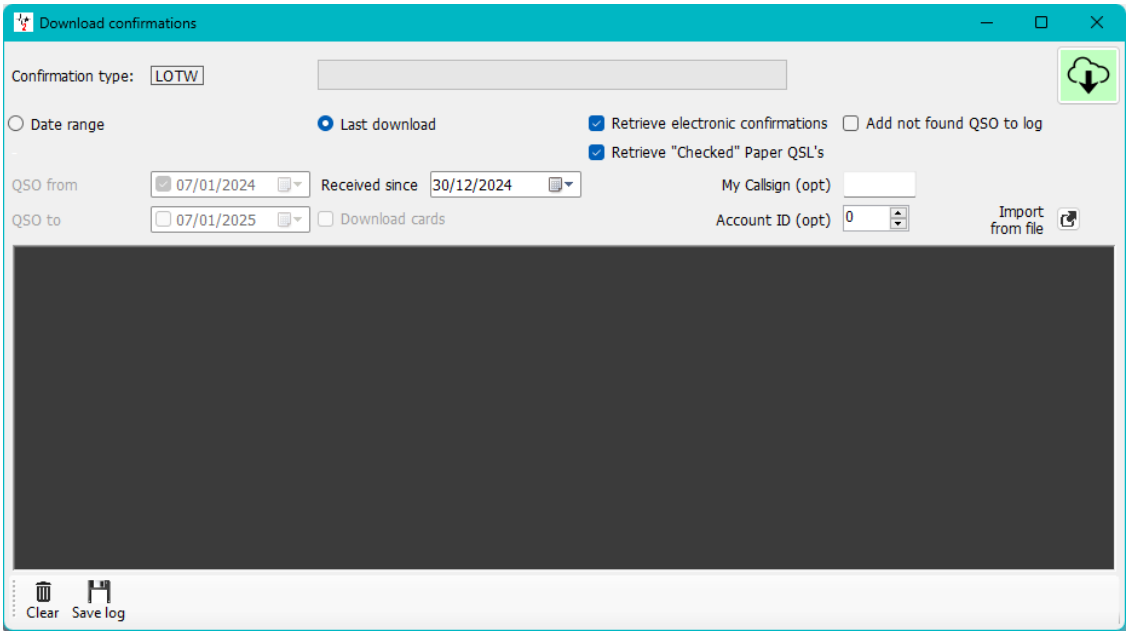
Open the ‘Edit QSO’ dialog for a QSO by double clicking on the QSO record

Select the ‘Attachments’ tab and click on file to view the related eqsl Card



LOTW manual download

- In the QSL manager select LOTW from the 'Special activities' menu
- Click the 'Download confirmations' button at the top of the window.
- Select either a date range or from the 'Last download' received date.
- If it is not required to download Checked Paper QSL confirmations do not check the box 'Retrieve ‘Checked’ Paper QSL's'
- Download can be filtered by the user’s station call sign if required.
- Where the user has multiple ID’s the ID number may be selected to refine the download to a specific identity.
- Click the green 'Download' arrow at the top right corner of the window.
- When the download is complete close the download window to view the results in the QSL Manager grid.



PLEASE NOTE: If no updates are available for download from LOTW the QSL Manager grid will not be populated unless the ‘Search’ button is pressed.

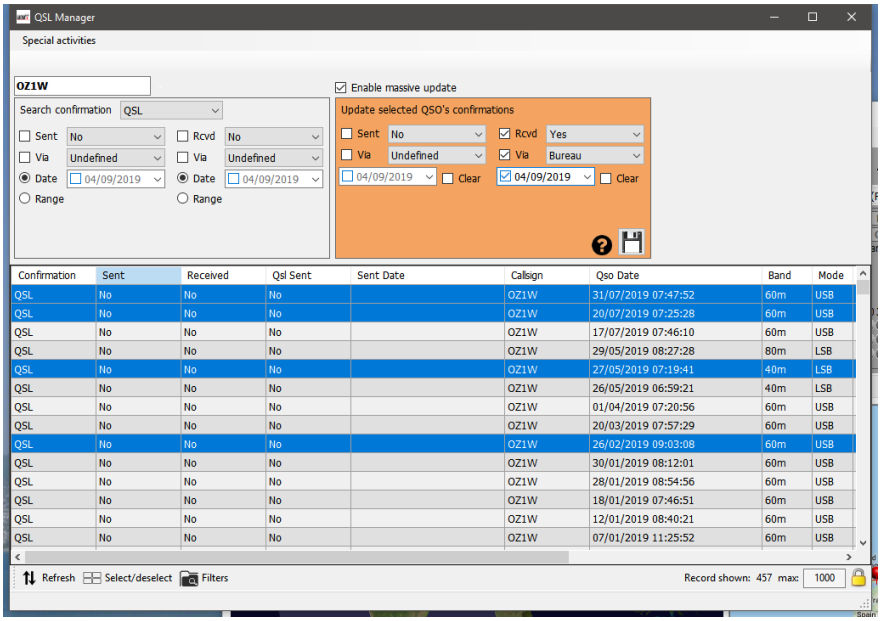
Importing an LOTW file

Where the user has downloaded a file from the ARRL/LOTW web site this can be imported and merged with the current logbook, it updates the confirmation status in the same manner as a normal download.

Recording QSL cards

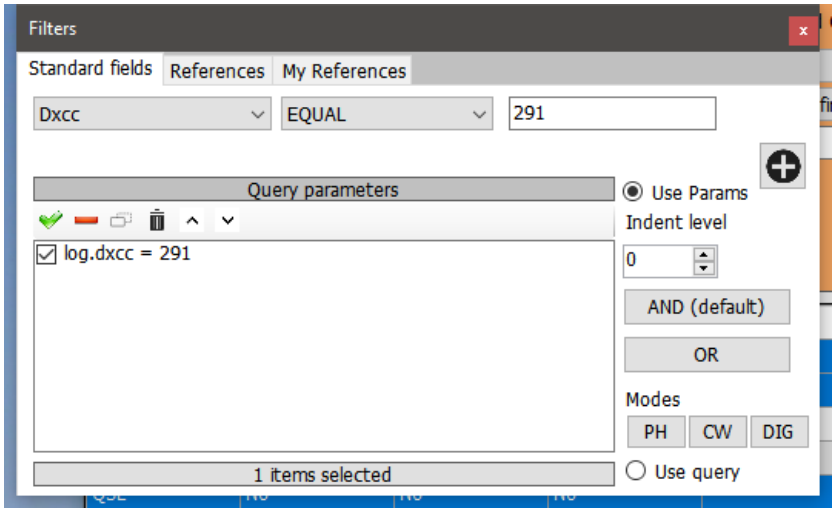
To manually enter QSL cards received by post or from the bureau

- Select 'QSL' in the 'Select confirmation' field
- Enter the call of the card received in the 'Call sign' field at the top of the window
- Check the box 'Enable massive update'
- Select the QSO's that are confirmed by the card
- Complete the fields on the right of the cream update pane
- Click the floppy disk 'Save' icon



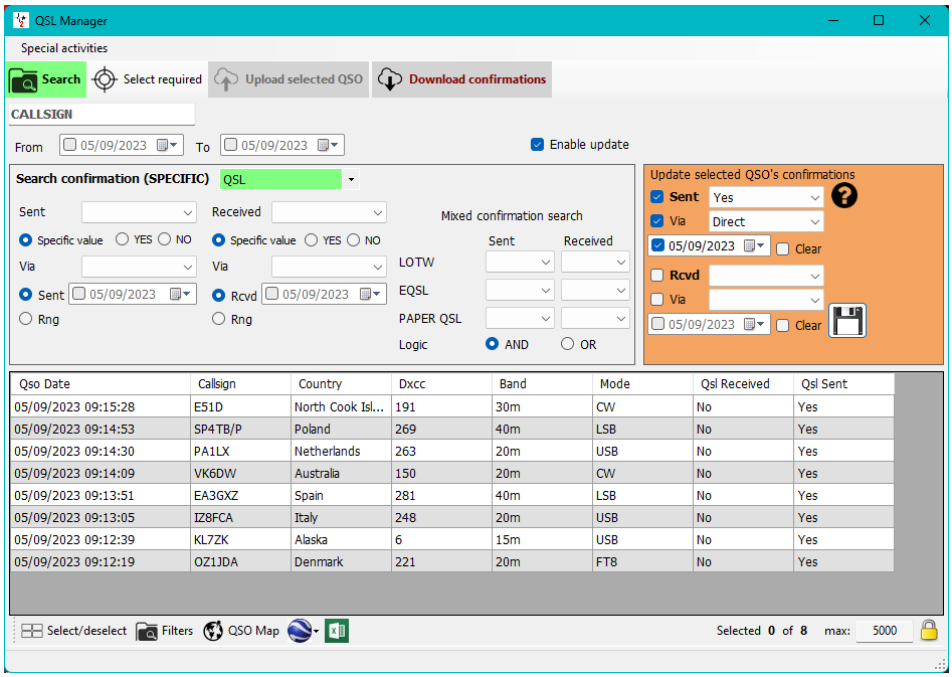
Updating SENT cards can be achieved in a similar manner by completing the left hand side of the Cream coloured pane marked 'Sent'

Search for QSO's by date, date range, sent and received status is done in the search pane on the left, more complicated searches are achieved by using the 'Filter' facility at the bottom of the window.

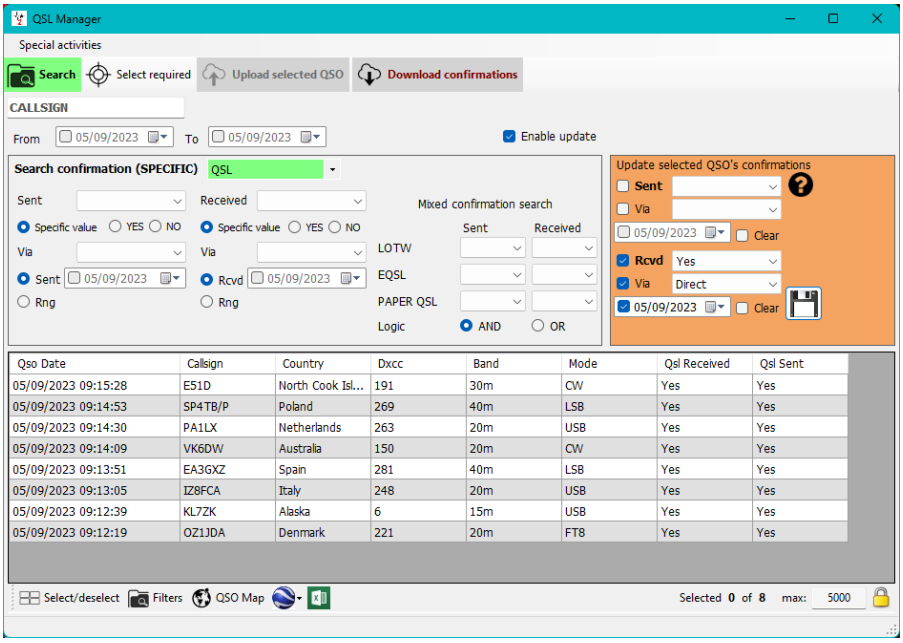


QSL Cards – Processing from card receipt to award credit granted status

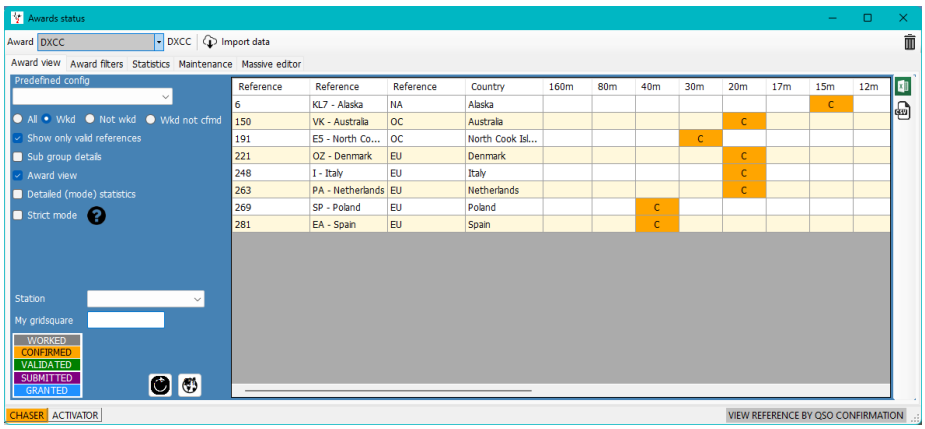
1. **Mark all QSO's as QSL sent in QSL manager.** (Either automatically when printing labels or manually in the QSL manager)



2. **Mark QSL cards as received in the QSL Manager**

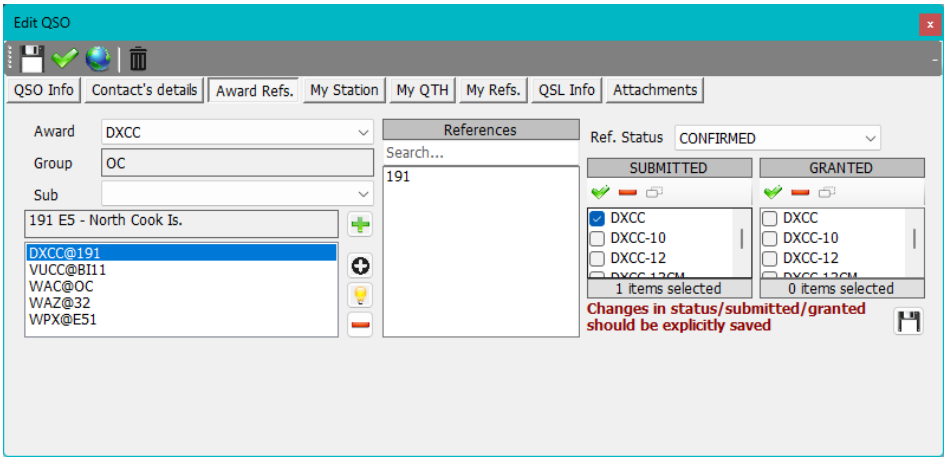


The 'Award statistics' displays all QSO's marked as above as 'Confirmed'

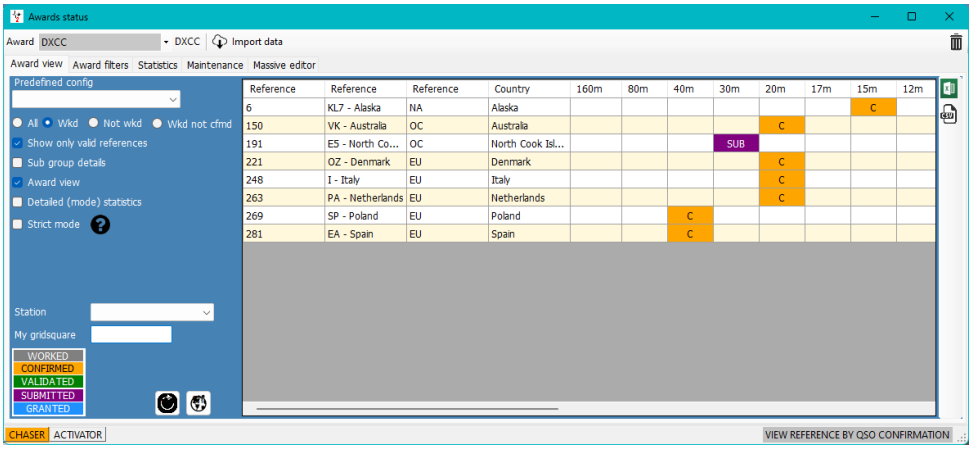


3. Mark a QSO as QSL card submitted for DCXX award

Click the small floppy disk save icon before clicking save and apply.



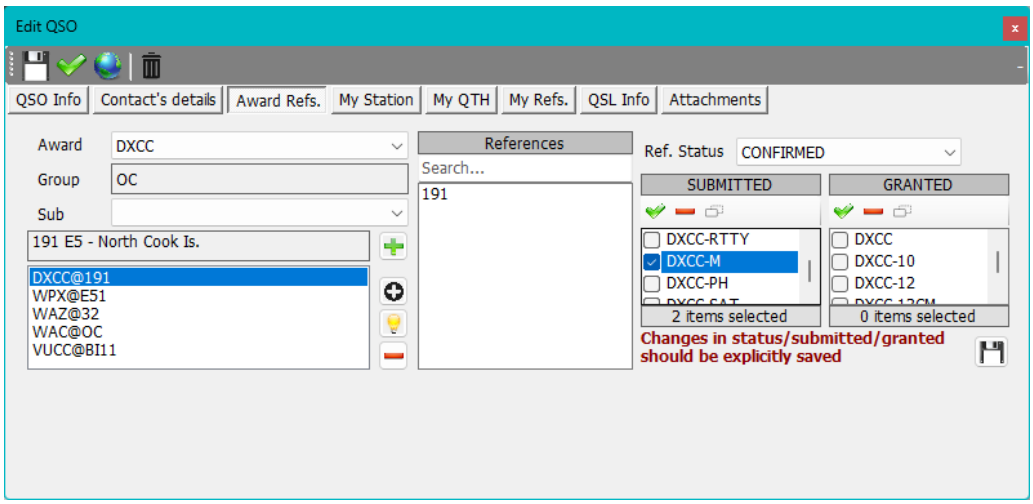
The QSO marked as submitted in the edit window is now marked as 'Submitted' in Award status.



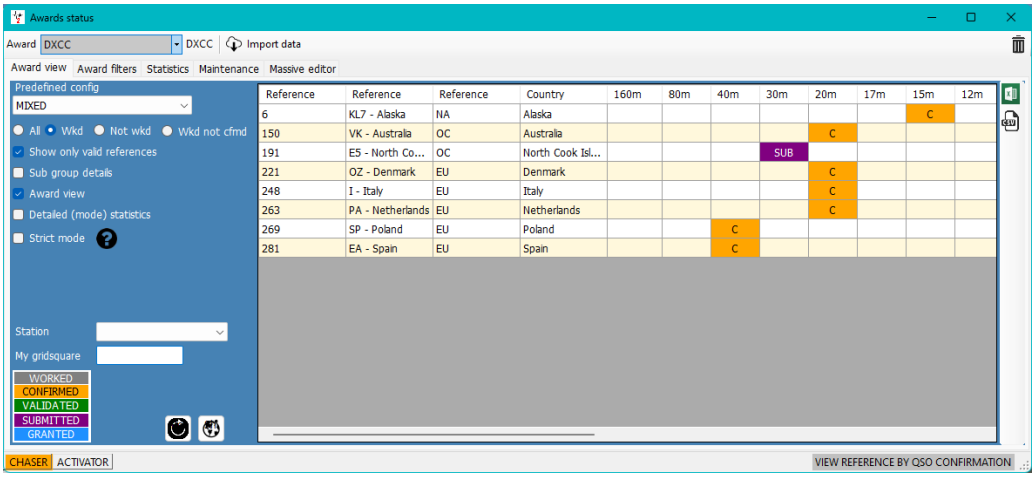
Applying for a preconfigured DXCC award i.e. Digital, RTTY, Satellite or Mixed etc

4. Select the required award i.e. 'Mixed' in the awards reference menu.

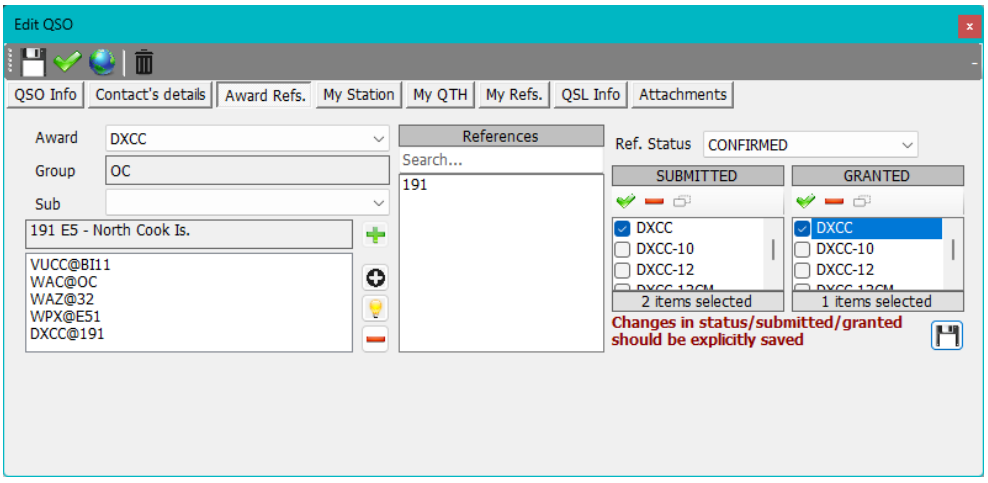
(Click the small floppy disk save icon before clicking save and apply.)



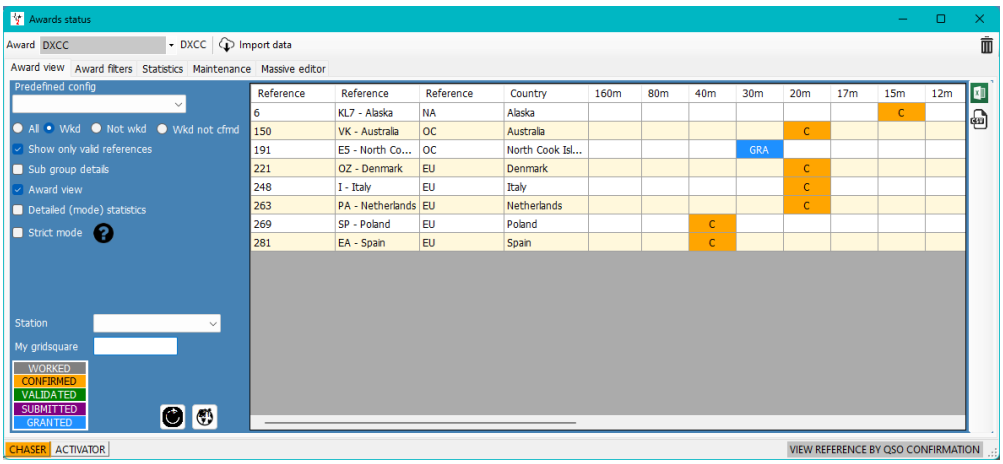
The predefined config in award status for DXCC/Mixed now also shows 'Submitted' as in the 'Mixed' example below.



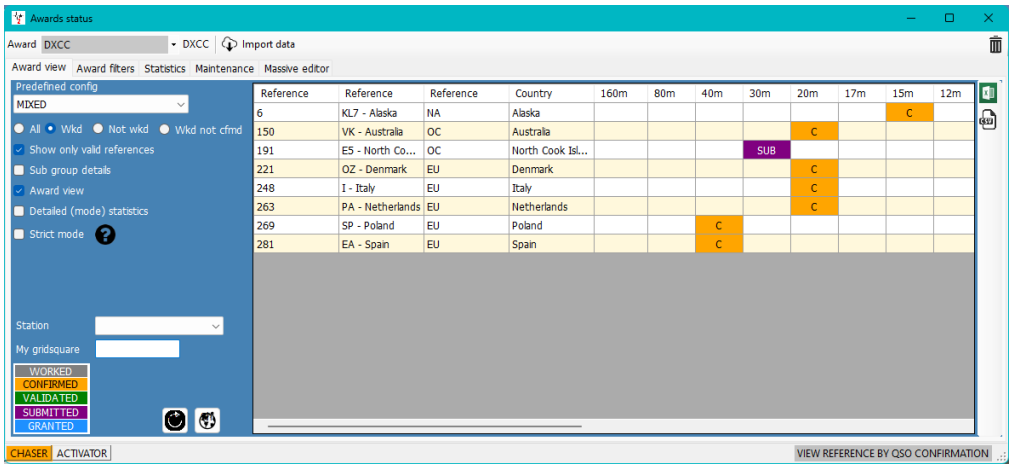
5. **When cards are returned from the card checker and granted for the required award, edit the QSO as 'Granted' for DXCC**
   (Click the small floppy disk save icon before clicking save and apply.)



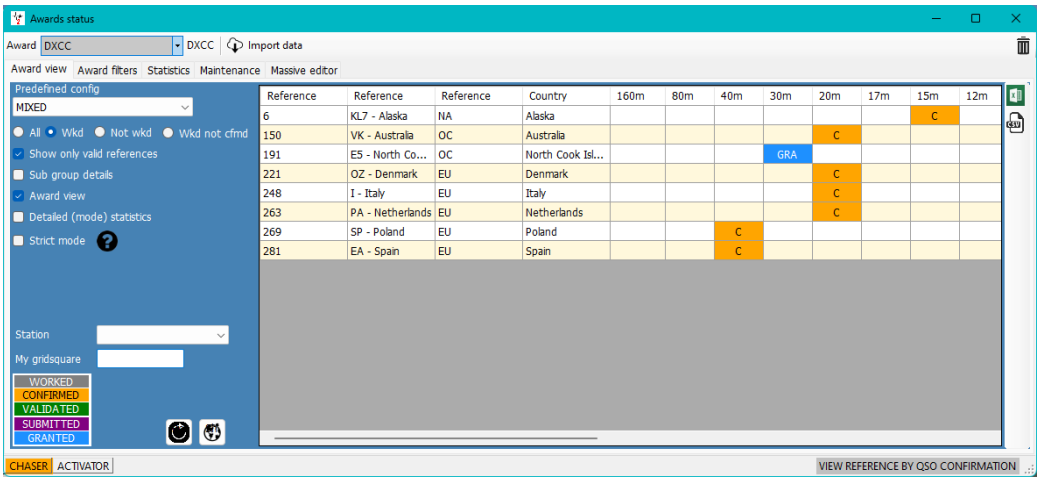
Award status for DXCC without using a predefined config shows the QSO as 'Granted'



The predefined config 'Mixed' remains as 'Submitted because it was not select as granted for mixed when the QSO was edited.

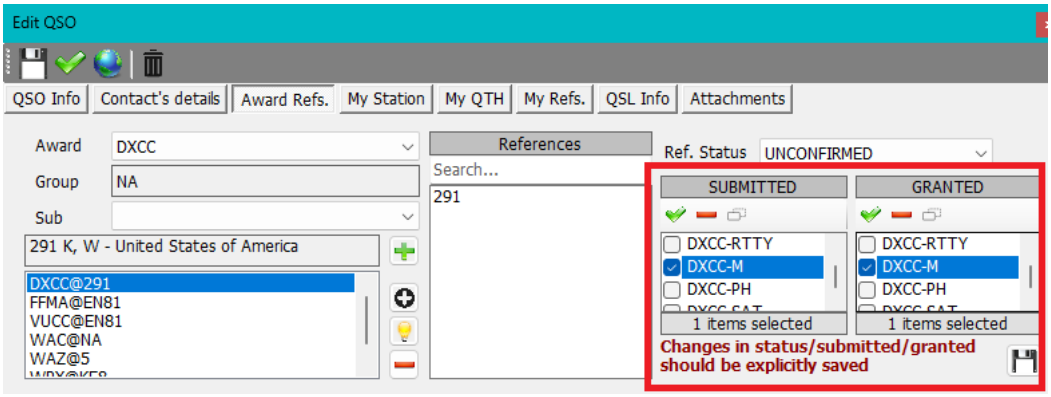


6. **Marking a QSO granted for 'Mixed' in addition to just DXCC and it shows as such in the Award status DXCC/Mixed**



NOTES:

If the user does not select a predefined DXCC award as Submitted or Granted in the QSO edit dialog it will not display as such in the matching 'Preconfigured award' view in the 'award status' display



Selecting DXCC without a pre-configured award allows the user to define the display results: e.g. Display only contacts with South Sudan on 10, 15 & 20m using CW for the current year?

The pre-configured award parameters restrict the displayed results to those allowed by ARRL for the chosen DXCC award rules i.e., CW, phone etc.

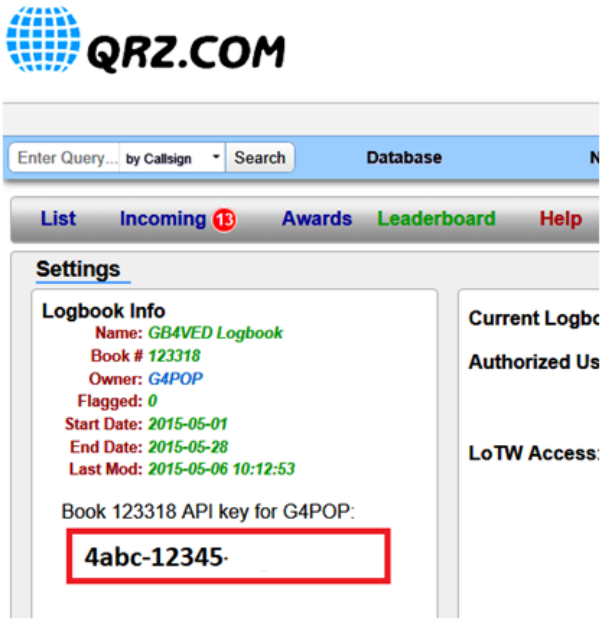
QSO automatic upload to online logs

In the Settings/Program configuration/external services tab select the on-line logs that are required to automatically upload. (QRZ, Clublog, HRDLog, EQSL, HamQTH and LOTW)

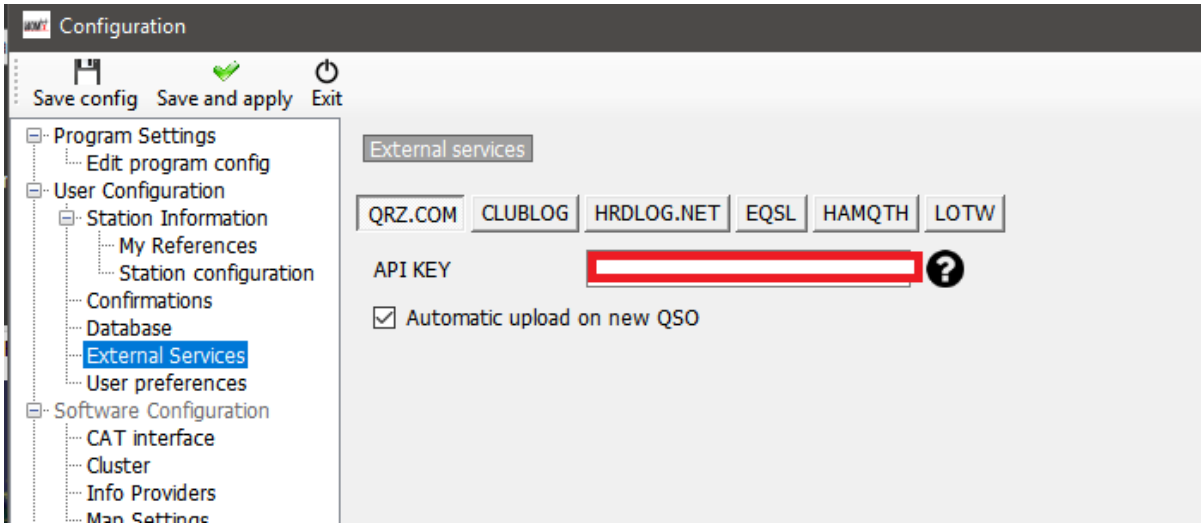
QRZ.com

The user MUST be a paid/subscribing XML member of QRZ to use the auto upload API provided by QRZ.

The QRZ API Key can be found by logging into the QRZ users web page and selecting My Logbook/settings, the API key is shown on the left hand side in the Logbook Info pane.

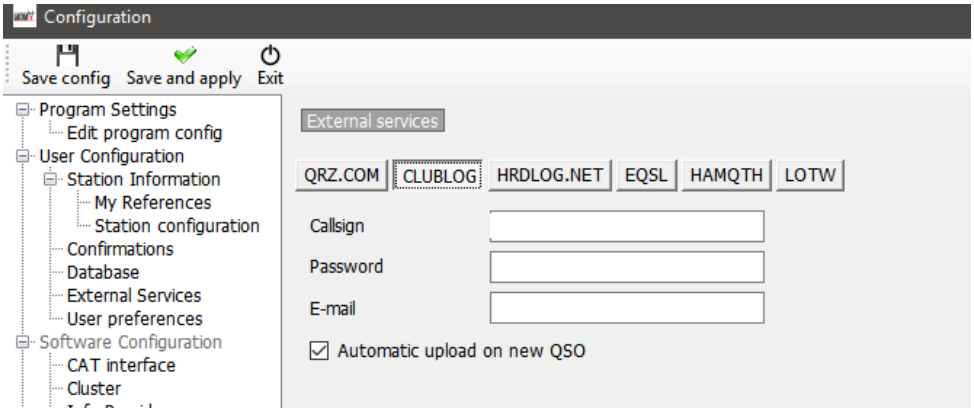


Copy and paste the API Key into the 'API Key' field as shown below and check the box 'Automatic upload on new QSO.



Clublog

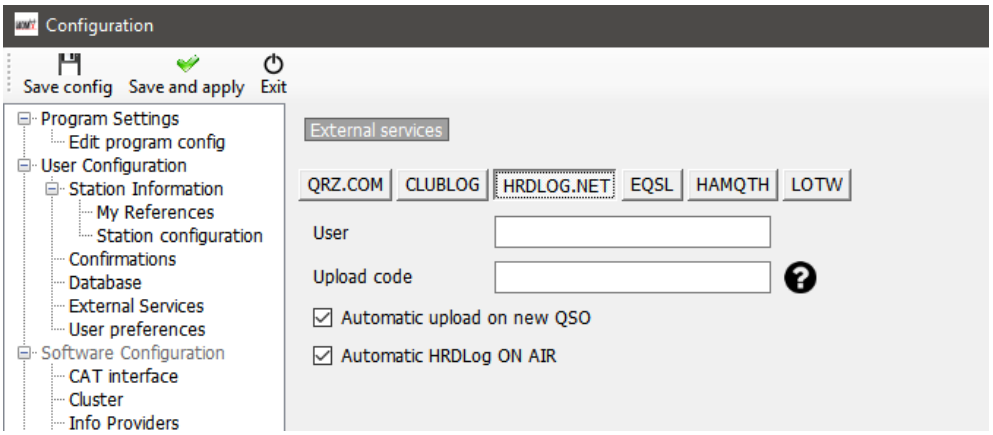
Complete the required fields and check the box 'Automatic upload on new QSO.



HRDLog

Obtain the upload code from the HRDLog web site and enter it with the call sign and check the box 'Automatic upload on new QSO'

If it is required to be visible to friends when on air in the HRDLog web page also select the 'Automatic HRDLog on air' box.



HRDLOG Upload code is NOT the users HRDLog password. It can be found in HRDLog user settings page or a request for an upload 'KEY' can be made on the HRDLog web site.

EQSL

Complete the required fields and check the box 'Automatic upload on new QSO.

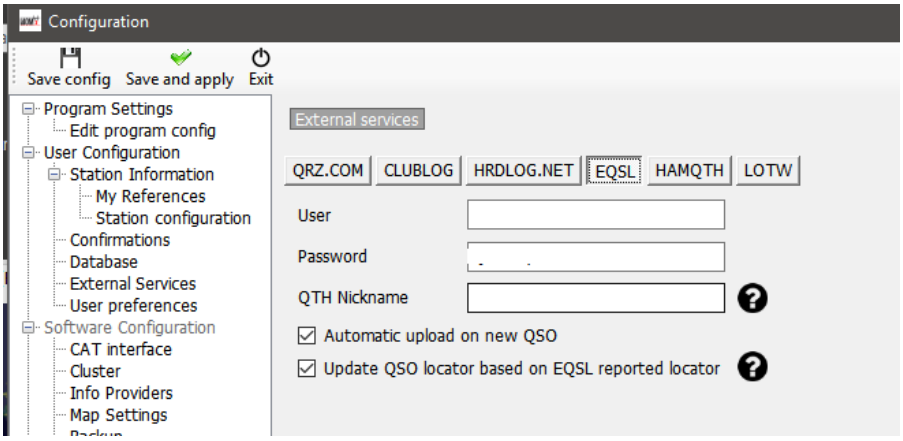
EQSL BUG

As at the time of writing 02/10/2020 there is a problem with eqsl passwords

EQSL allows users to register using an 18-digit password but the EQSL upload password will only accept 14 digits which causes upload or login to EQSL to fail.

EQSL have been made aware of this bug but until they cure it users are reccommended to restrict password lengths to 14 digits

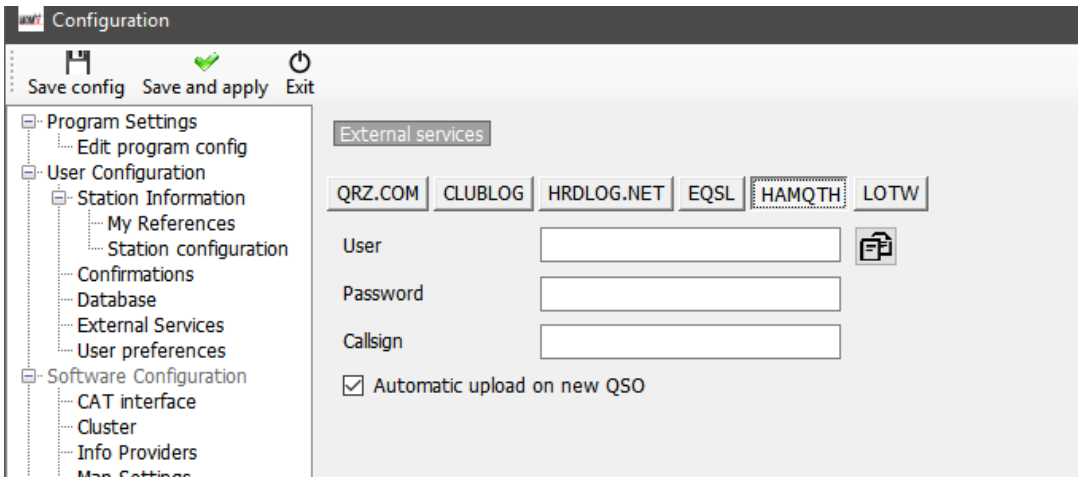
Ensure that the 'QTH Nickname' corresponds to that shown on the EQSL user profile page



Also check the 'Update QSO Locator based on EQSL' to use the locator from EQSL

HamQTH

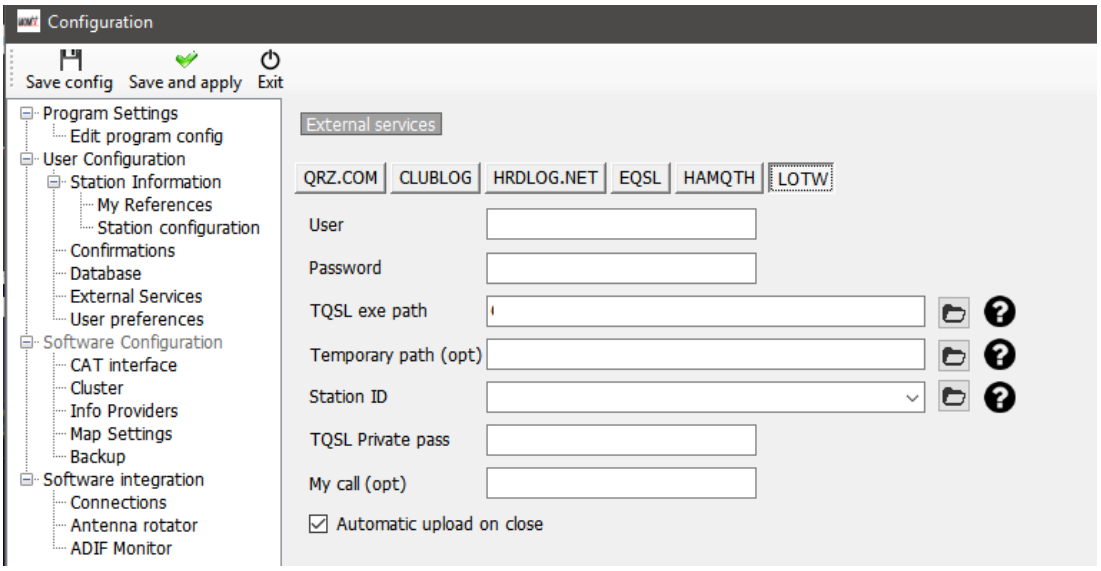
Complete the required fields and check the box 'Automatic upload on new QSO.



LOTW

Complete the required fields and check the box 'Automatic upload on new QSO'.

- The TQSL program must be installed and a valid certificate recorded
- The 'Temporary path' MUST be completed
- The 'Station ID' and 'User' (Call sign) MUST match that for the certificate being used by TQSL



When all on line log details are completed click the 'SAVE and APPLY' button

Automatic upload to external sources will happen in a range of 0 to 30 seconds after saving by background process.

Log4OM will provide an option to add 1 minute minimum delay after the QSO is saved, to allow users to delete erroneous QSO saved

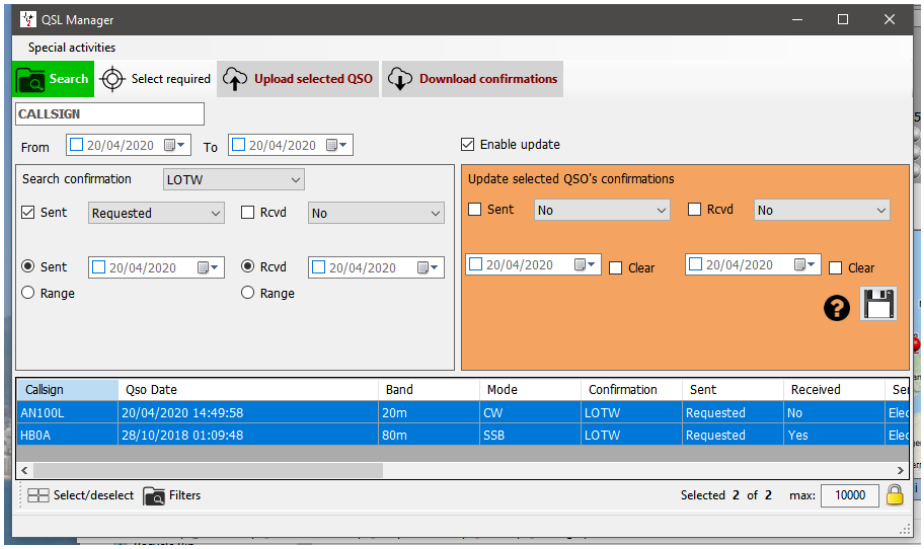
LOTW manual upload

In the 'Utilities/QSL manager' window the user may sort, filter and select using the tools provided and detailed elsewhere or employ the 'Select required' button.

Select Required

The select required button will sort according to the settings selected in the 'Settings/Program Configuration/confirmations' and the 'Settings/Program Configuration/External services/LOTW' tabs.

e.g.
If confirmation type LOTW is set to sent = Requested
and
If the External service LOTW 'UPLOAD FLAG' is set to Requested
Then
Clicking the 'Select Required' button will filter the QSO's for all marked LOTW sent status = Requested and highlight them ready for upload



Clicking on the 'Upload selected QSO' button at the top of the window will open the upload window which will display the number of QSO's being uploaded and when the Green upload arrow is pressed display the progress of the upload.

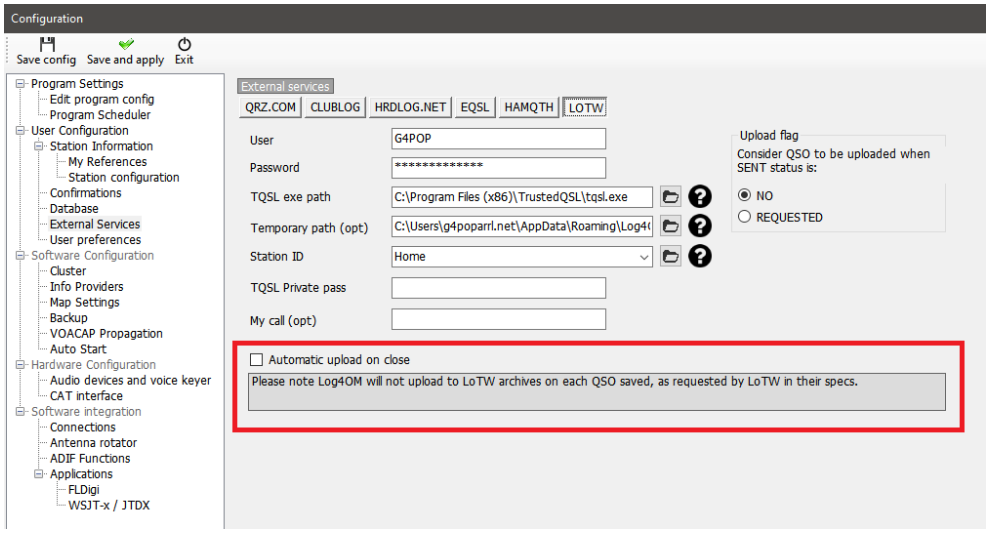
When the actions are completed close all windows

LOTW Automatic upload

LOTW ask developers not to automatically upload QSO's as each QSO is saved because it puts too much load on the LOTW servers during times of contests and special expeditions.

Log4OM will automatically upload QSO's that are marked Sent status = No or requested according to the settings in the 'Settings/Program Configuration/confirmations' and the 'Settings/Program Configuration/External services/LOTW' tabs, when the program is closed down.

To select this automatic upload facility check the box 'Automatic upload on close in the 'Settings/Program Configuration/External services/LOTW' tab.



Explanation of External service/LOTW fields

User – The users call sign

Password – The password used when logging into the ARRL/LOTW web site

TQSL exe path – The location of the TQSL software on the users computer (Default is C:\Program files (x86)\TrustedQSL\tqsl.exe)

Temporary path – A location on the local computer where Log4OM can store LOTW temporary files – The user MUST specify a location.

Station ID – The Station location as stored in TQSL program for the Call sign specified in the User field above.

TQSL Private password – Any private password used by TQSL (Not normally used)

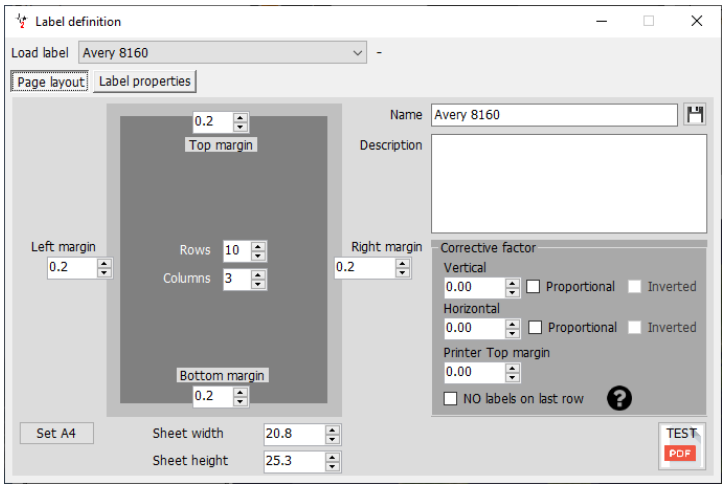
My Call – The users call sign (Not normally used)

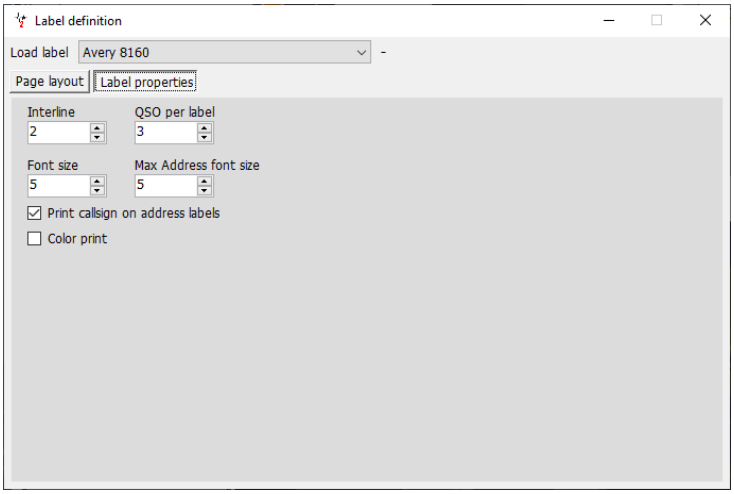
Labels

Log4OM provides a label print and design feature for QSL card and address labels.

Label design

Label design is available in the 'Utilities' menu, some standard label templates are provided but new templates are easily designed using the Utilities/Label Definition menu.





Once a template has been designed a test print facility is provided to check the design fits the label stationary by clicking the 'Test PDF' button.

NOTE

Printers of the same make and model do vary somewhat in the print layout so Paul might have to make some SMALL changes to the correction factors - If you do then DON'T FORGET TO SAVE THE LAYOUT.

Points to watch for

1. Dont assume a template is automatically saved, it must be manually saved

2. Corrective factors will often need to be applied to label templates to account for differences in printer accuracy.

3. Entering a correction factor adds that correction EQUALLY to each label spacing.

4. Checking the box for a proportional correction factor increases the label spacing correction factor proportionally with each successive row/column e.g., if a value of 3 is selected the first space will be 3, the second spacing will be 6, the third spacing will be 9 etc etc etc.

5. Checking the box for an inverted proportional correction factor increases the label spacing correction factor proportionally **in reverse** e.g., if a value of 3 is selected the last space will be 3, the penultimate spacing will be 6, the next spacing will be 9 etc etc etc.

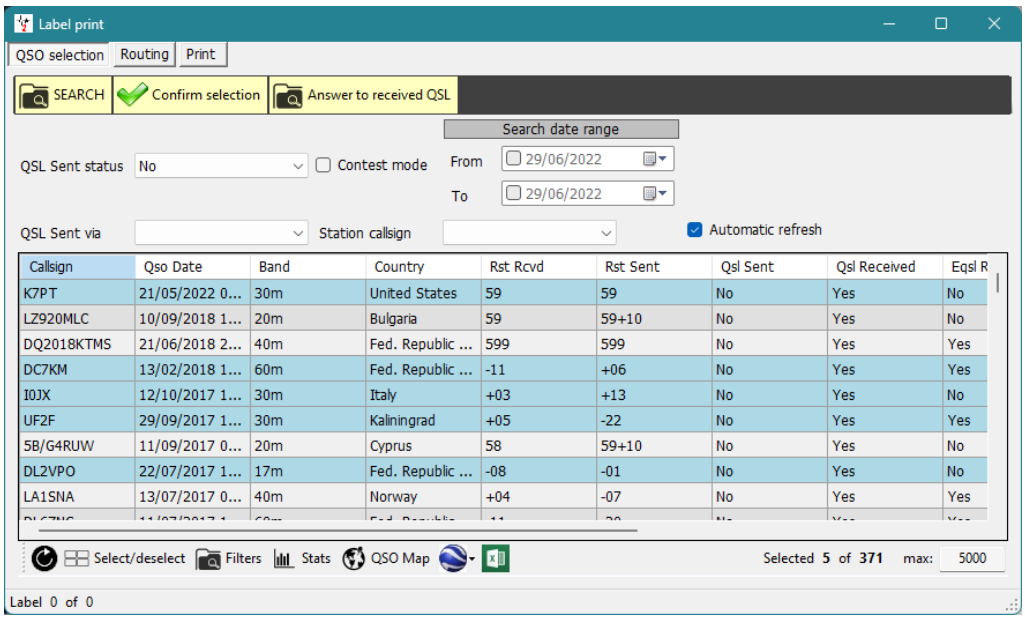
It is suggested that a test print to normal copy paper is made and that then be placed over the label stationary and held up to a light source to check for layout correctness instead of printing tests directly to expensive label stationary.

PLEASE NOTE
Even printers from the same manufacture and of the same model will vary in print layout it may therefore be necessary to use the 'Corrective factor' fields to fine tune the layout.

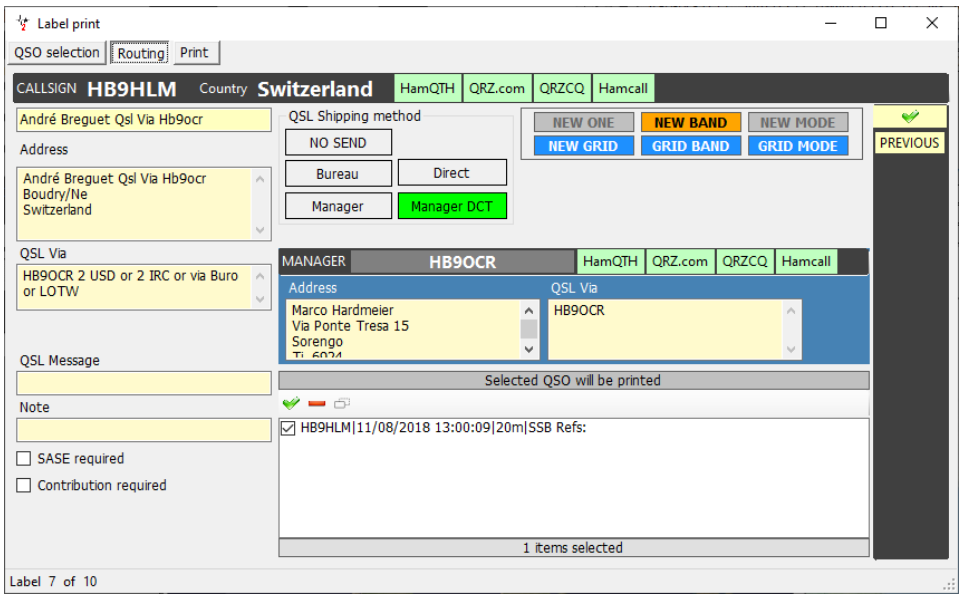
QSL Label Printing

The Label print menu can be selected from the utilities menu.

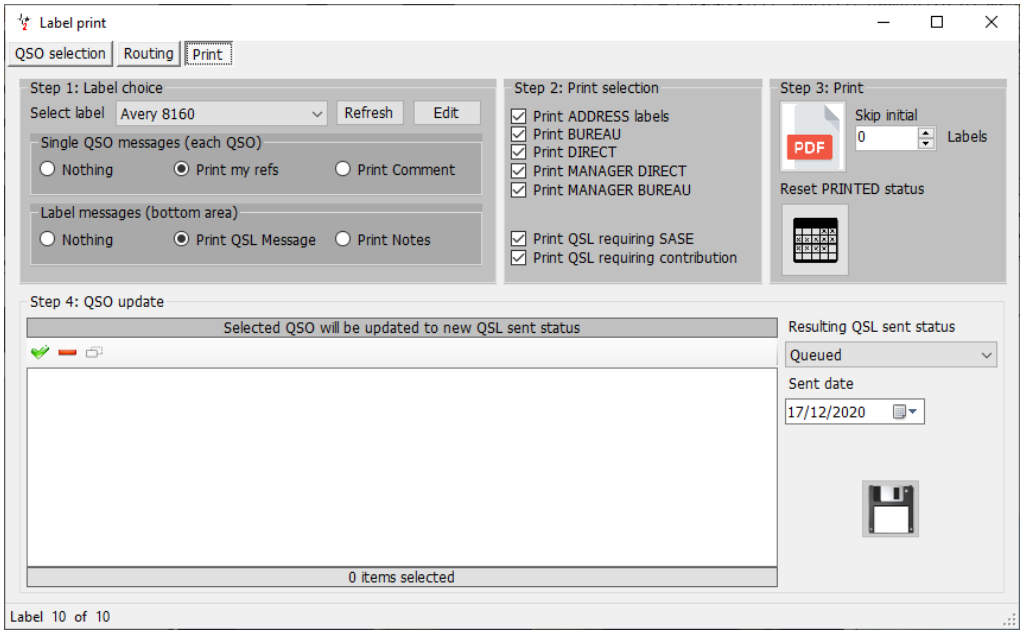
- Select the QSO's for which labels are required by using the various filtering options in the QSO selection tab i.e., Sent status, date range, QSL method, Station call sign and by 'Answer received QSL's' or on any other field by using the filters. (Selection by station call sign is particularly useful when operating special event call signs or contest calls.)
- Once the QSO's are selected highlight them for printing



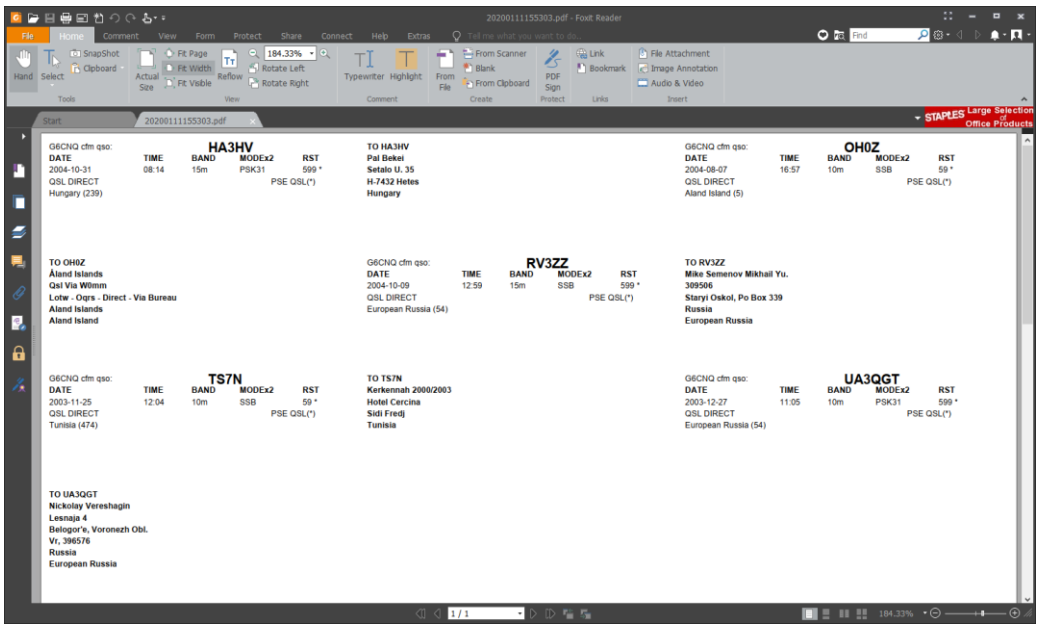
- Click 'Confirm selection'
- Ensure the information is correct for each QSO by using the online lookup choices at the top of the window
- Append any special QSL message or note to be added
- Select the desired QSL method (No send, Bureau, Direct, Manager or Manager DCT)
- Click the Green check mark at the top right of the window to confirm the selection and details



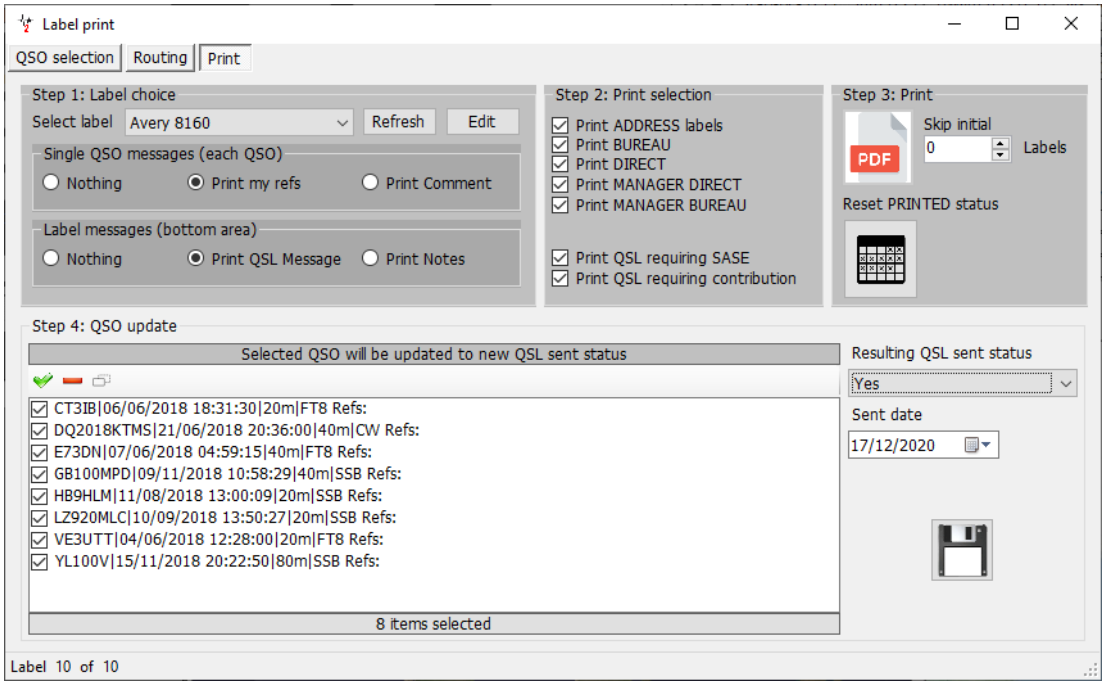
- When all have been marked as selected click the 'Print' tab
- Select the required label stationary
- Check additional print details (Print QSO Msg, Comment, My refs. etc)
- Select the appropriate label messages (Nothing, Print QSL message or print notes)
- Check the required print selections (Direct, Print address labels etc.)
- Select the position of the first label to be printed
- Click the PDF button



- The DEFAULT PDF viewer will open and display the labels to be printed as below



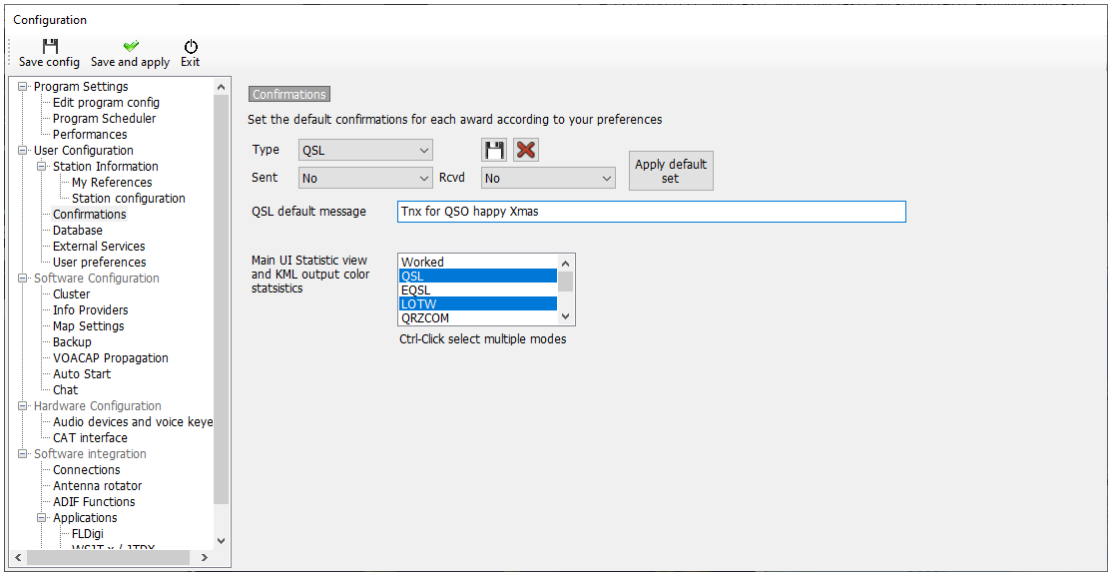
- Assuming the results are acceptable print the labels.
- Select the QSO sent status to be marked for each of the QSO's listed
- Select the date for the QSO's to be marked as QSL sent date
- Click the 'Floppy disk' save icon and each QSO will have its QSL sent status and sent date updated and saved.



The operation can be aborted by clicking on the 'Reset PRINTED status' button

Default QSL message

A user defines default message can be added to the Settings/Program configuration/confirmations tab as below:



Statistics analysis

Log4OM V2 provides detailed statistical analysis of the database in a variety of ways

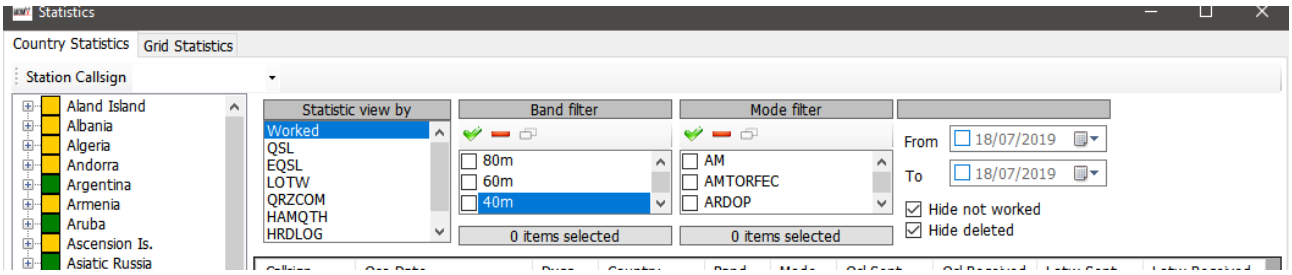
Statistics for Countries worked and confirmed

The status of a confirmation for a country (DXCC Entity) is displayed in the statistics form (View/Statistics)

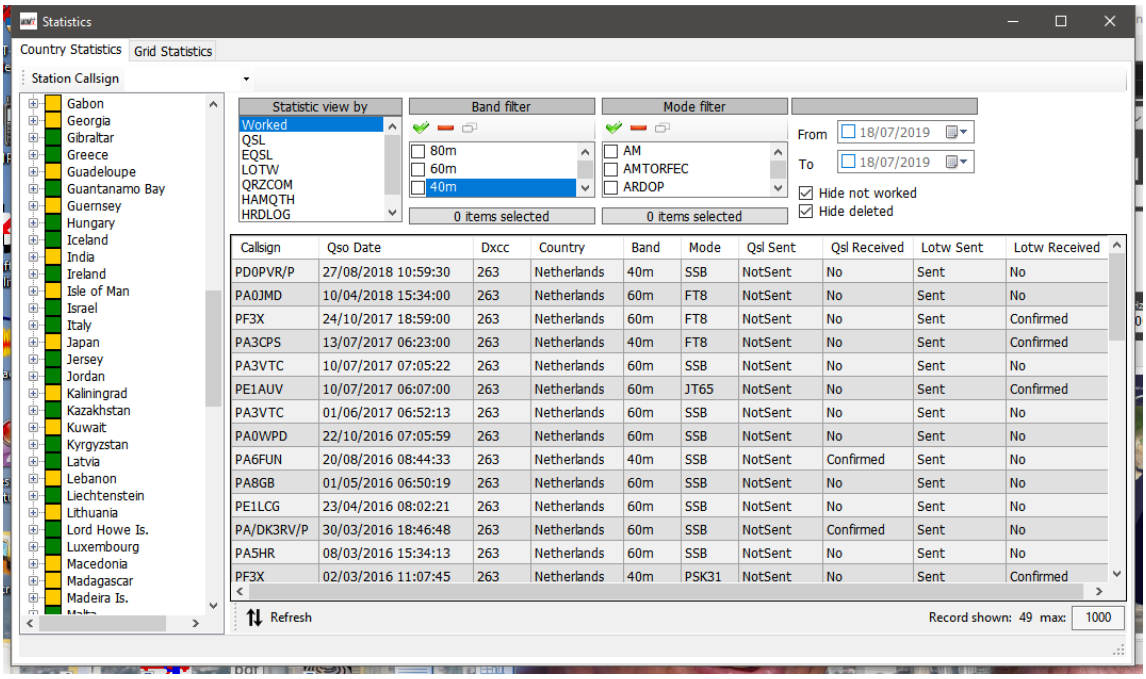
These statistics can be filtered by the following methods:

- Confirmation type - QSL, EQSL, LOTW etc
- Band or multiple bands
- Mode or multiple modes
- Date range
- Include or display deleted entries and un-worked countries

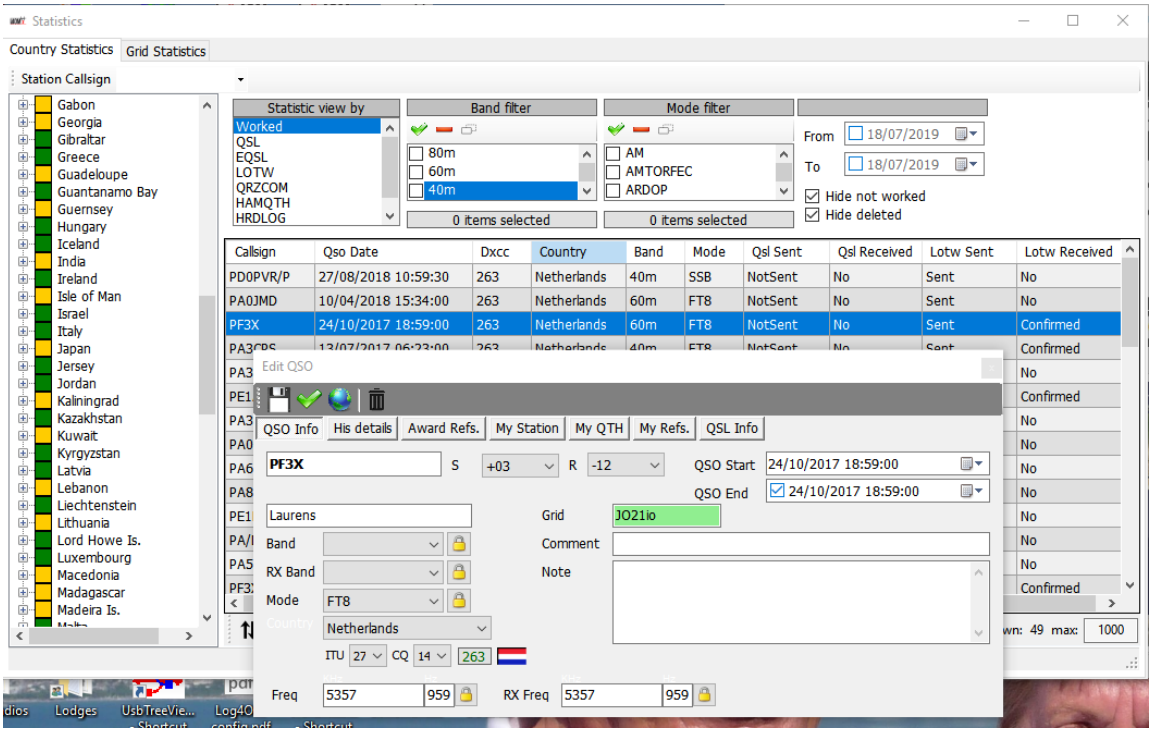
These filters are applied by using the selection menus at the top of the window.



Selecting a country in the left-hand country list will display all contacts with that country.



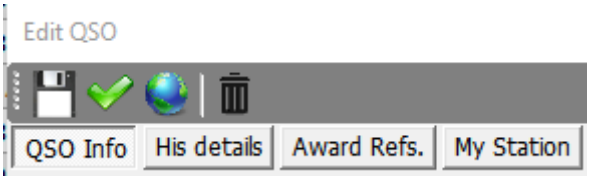
Double clicking on an entry in the list will open the editor window.



Editing data

At the top of the editor window are 4 icons:

- The extreme left icon like a floppy disk saves any changes made
- The second, check mark icon saves and changes and closes the window
- The third icon which is globe shaped performs an on line lookup of the call sign and updates any missing information.
- The right-hand icon resembling a dustbin deletes the record.

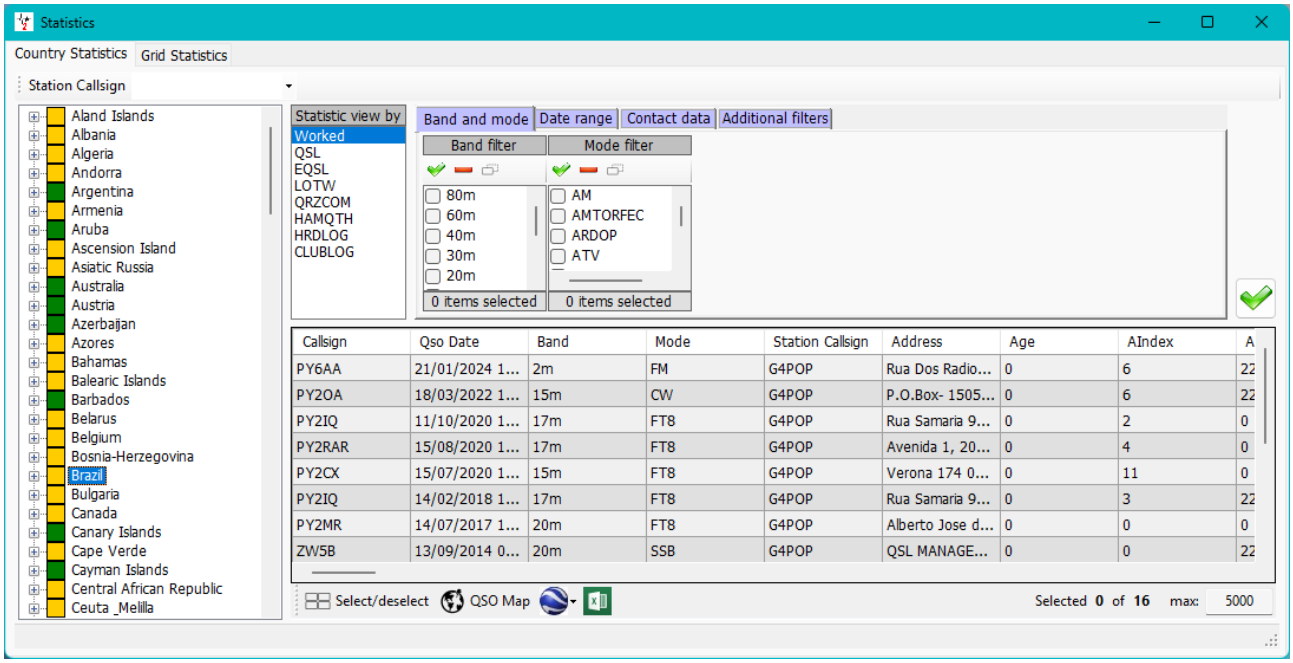


The various tabs provide editing of the other stations data, the users data and QSO information, including updating QSL confirmations and award references.

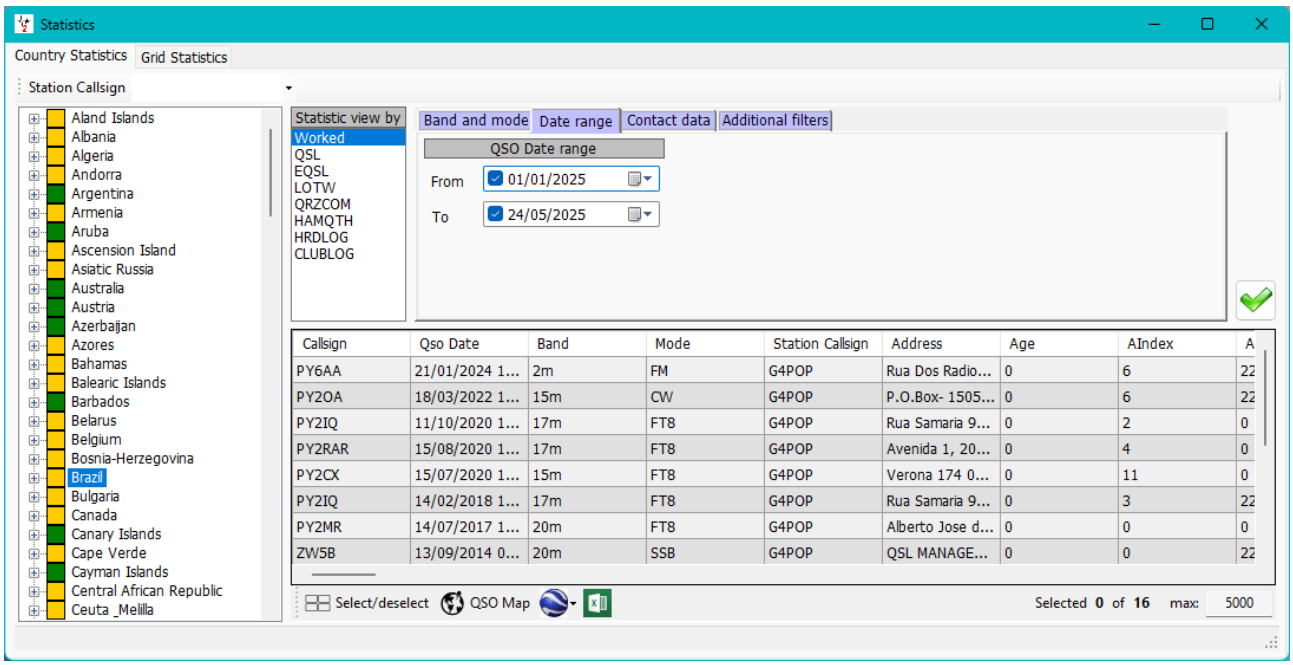
Statistics for Grid references worked and confirmed

The grid statistics tab in the main window provides similar information and filtering possibilities to the country's confirmations grid for Maidenhead grid References.

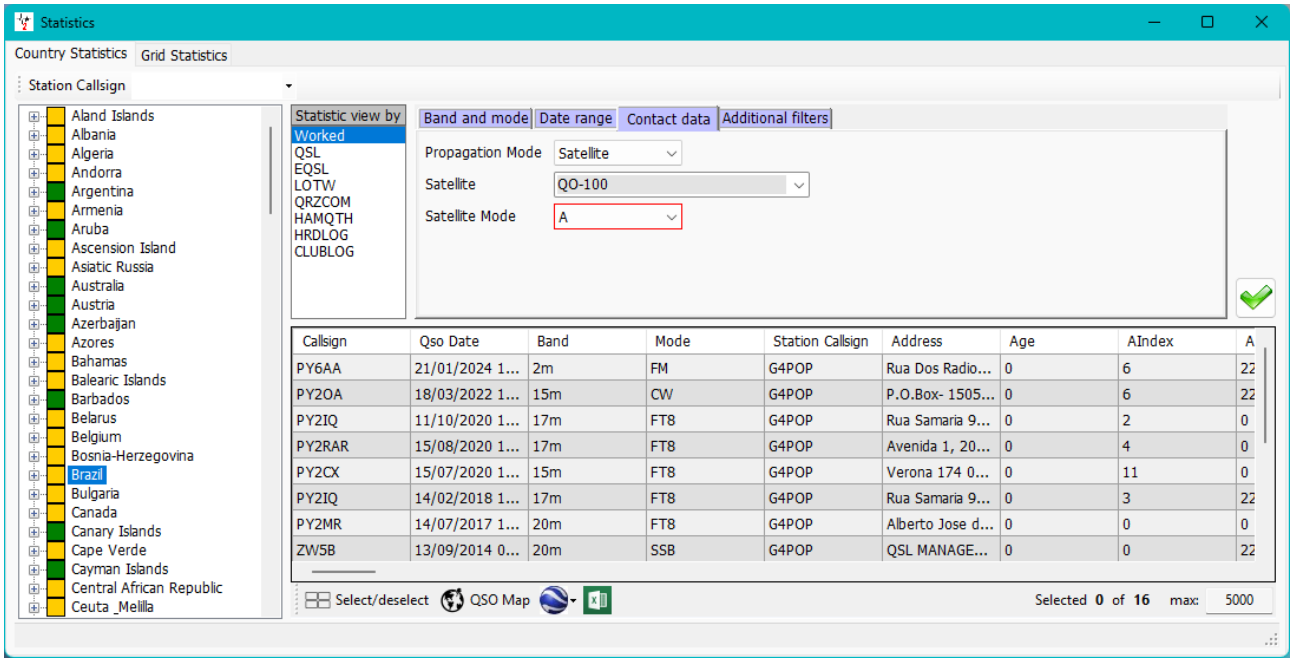
Filters grid Confirmation status, bands and modes.



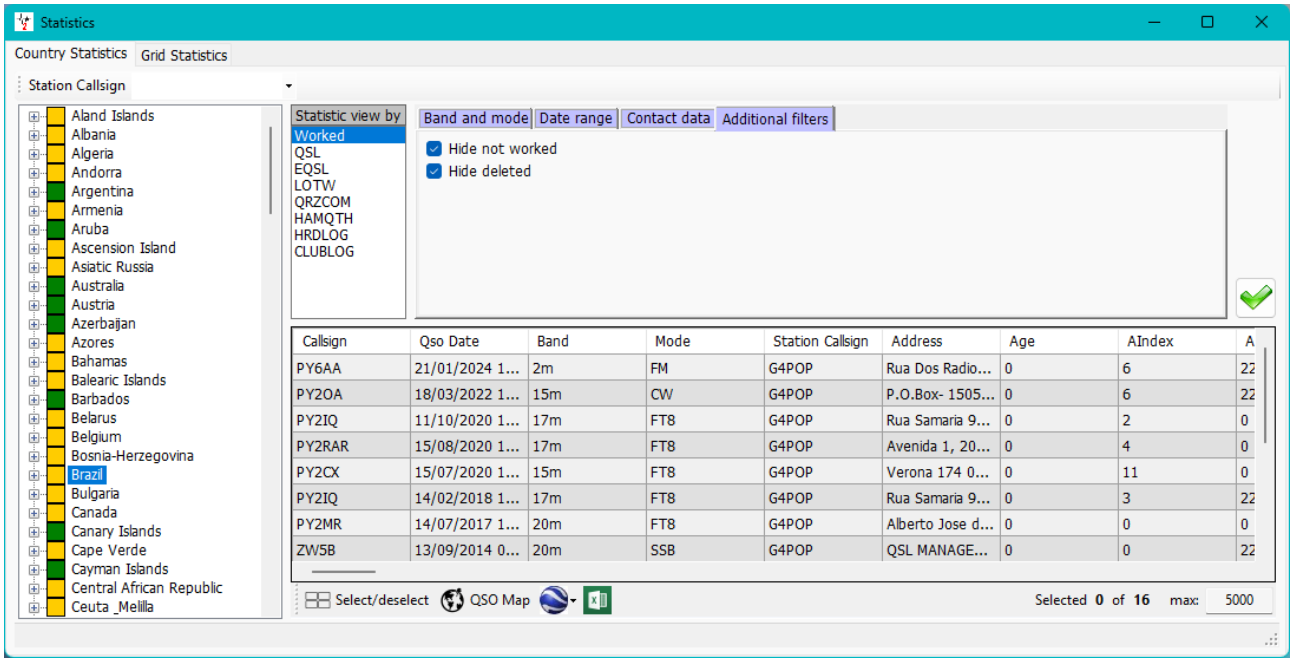
Filter grids by date range



Filter by contact data



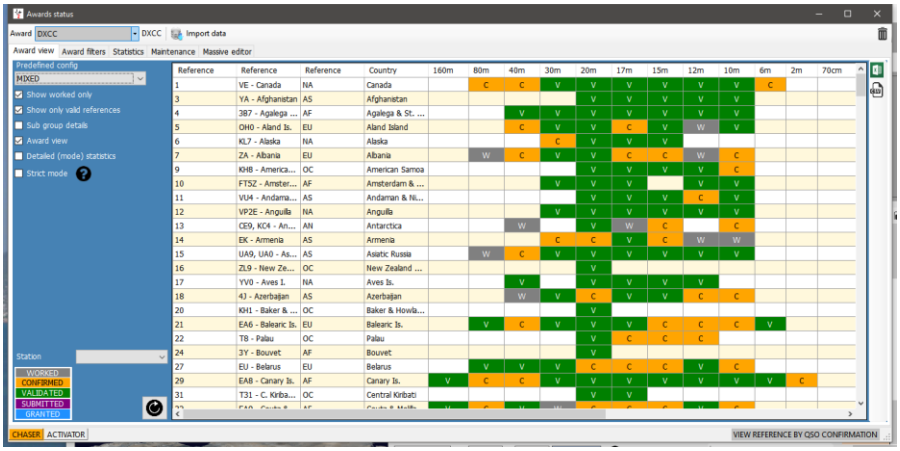
Filter grid data by Additional filters



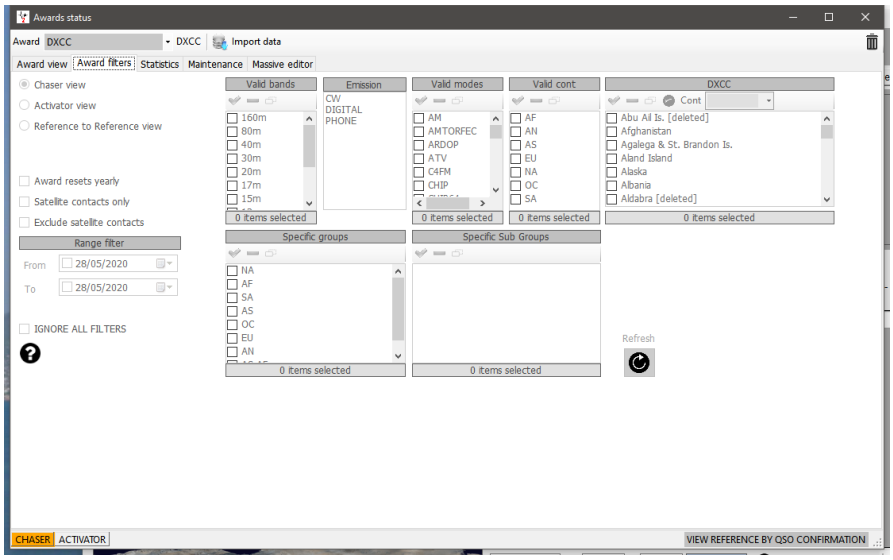
The filtered results can be viewed as a QSO map or on Google Earth and exported to an Excel spreadsheet.

Award status

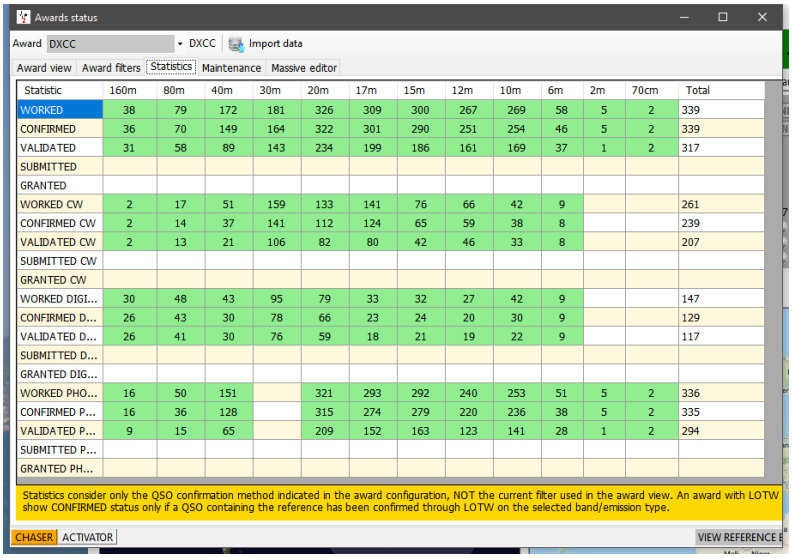
The status of award confirmations, submissions and credit is displayed in the Awards Statistics form (View/Awards Statistics) by selecting DXCC from the awards menu and the type of DXCC award from the Preferred config. menu.



The awards filters tab enables advanced filtering of awards (Not major default awards like DXCC etc)



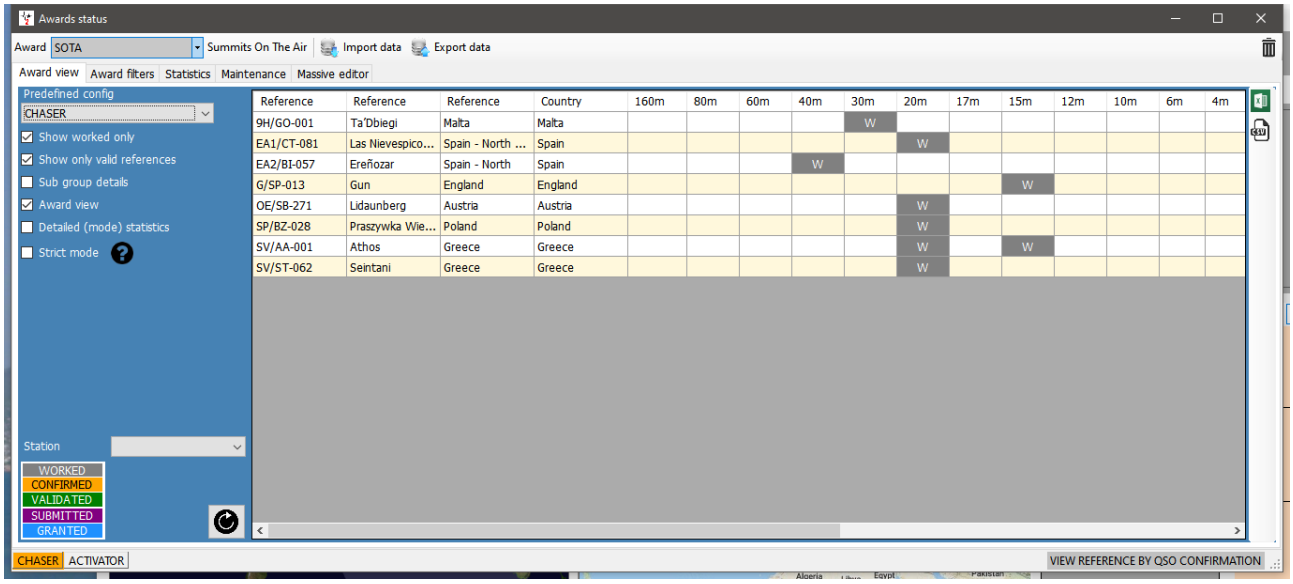
Complete statistics for confirmation and award credited status is displayed in the 'Statistics' tab



Viewing confirmations in awards that rely on upload management

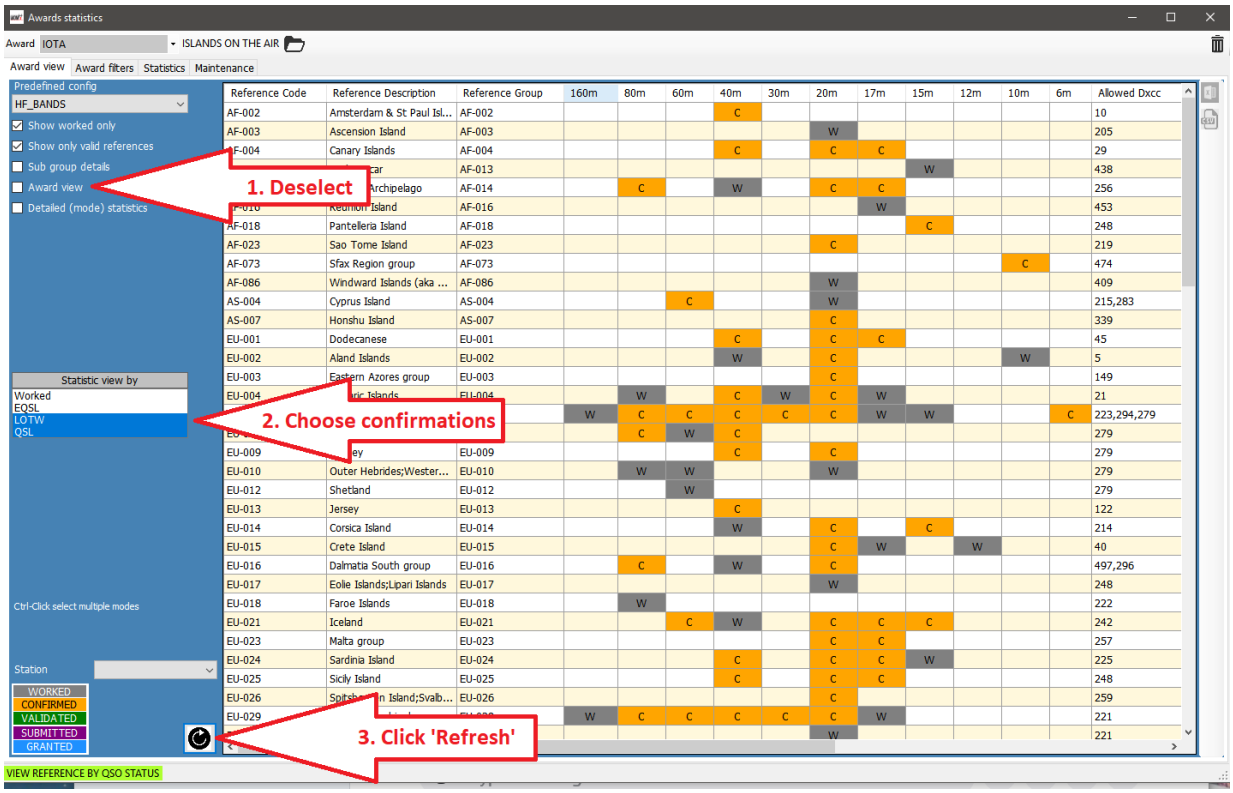
Some awards do not require confirmation by the normal methods of paper QSL's, LOTW, eQSL etc because the awards are confirmed and credited by an upload to the award manager only e.g. IOTA and SOTA.

With these awards the display will only provide a grey 'Worked' status cell for the references worked as below.



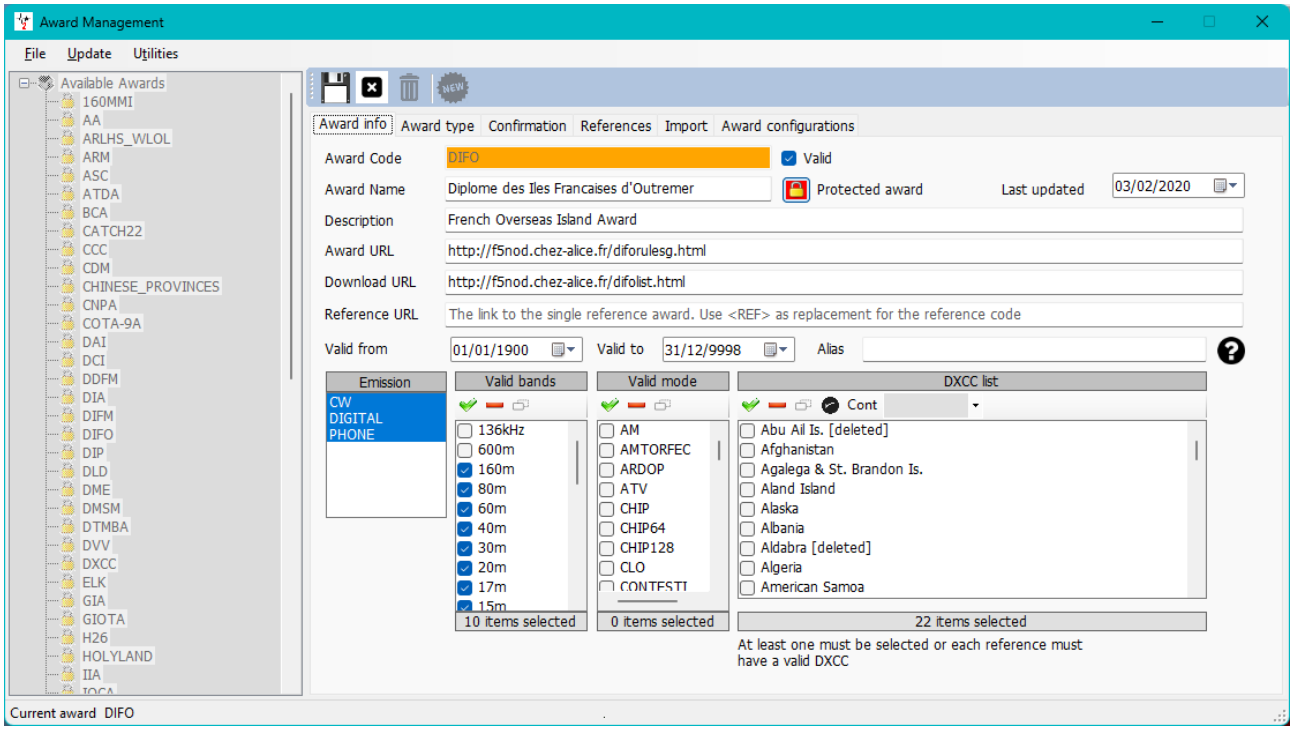
It is possible to choose to display confirmations by:

1. By de-selecting the 'Award view' check box
2. Selected the confirmation types from the 'Statistics view by' menu
3. Click on the refresh button.



Awards Manager - Basic use

It is possible to edit, create, import and export awards using the Awards Manager (Utilities/Award manager)



Double left clicking any award in the left-hand pane will open it ready for editing

Awards can be backed up, imported and exported using the File menu and updated via the update menu while the Utilities menu provides Excel file management for merging files.

Backup and restore user awards

Select in the 'File menu

Exporting an award

Select the award by double clicking on it in the left-hand pane.

- Select File/Export award.
- Select a location, provide a name and save.

Importing an Award

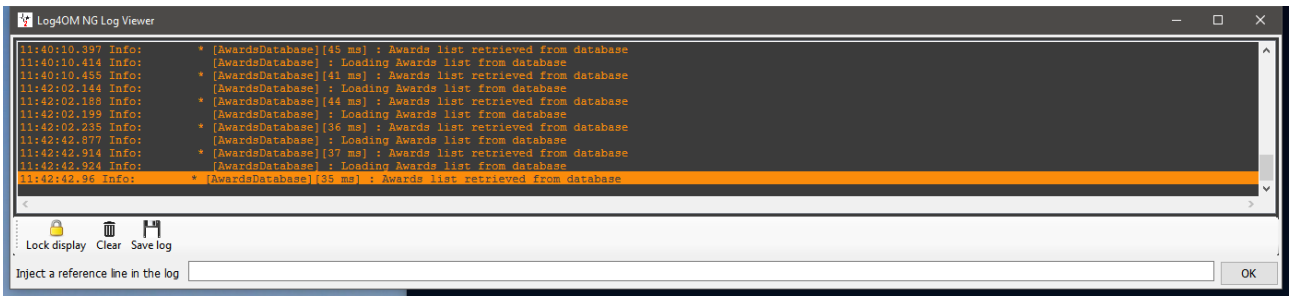
- Go to Utilities/Award manager then File/Import award - select file - close award manager.
- Go to Settings/maintenance/rescan QSO References (This will take some time but you can watch its progress in the Help/Real time log window

Updating Awards

Provides update of IOTA, SOTA and the Log4OM general awards

Utilities

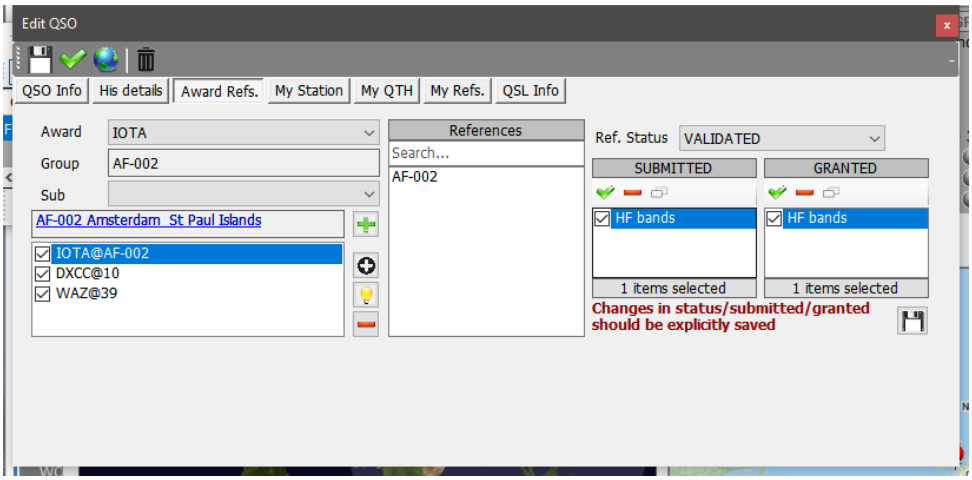
Allows merging and export of Excel worksheets.



- When the bottom line indicates 'Award update complete', the log window can be closed

Award credit - Editing

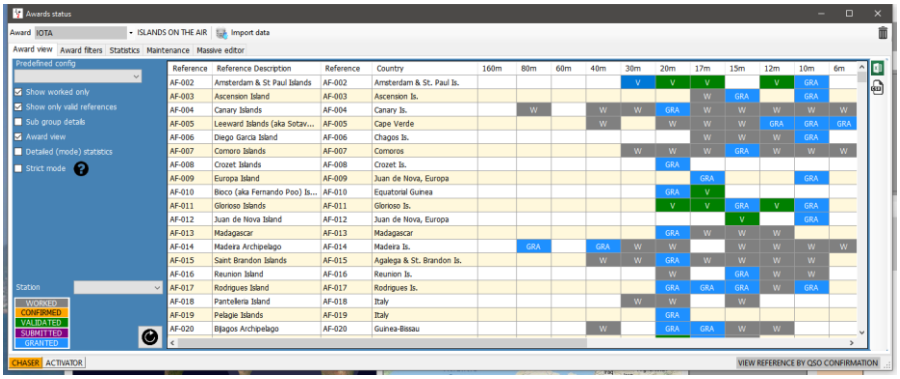
There can be occasions where award credits require editing, either singly or in bulk. Single award credit editing can be accomplished by double clicking on the relevant QSO and selecting the ‘Award Refs’ tab in the edit window, selecting the award and checking/unchecking the submitted and granted check boxes.



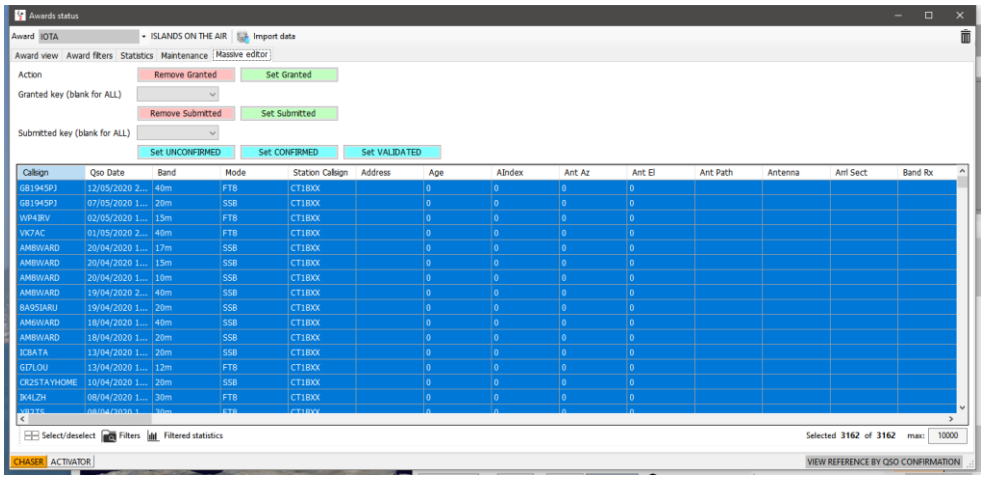
Award Credit – Bulk Editing

When more than one QSO requires credit updating:

1. Open the ‘View/Award status’ display
2. Select the required award



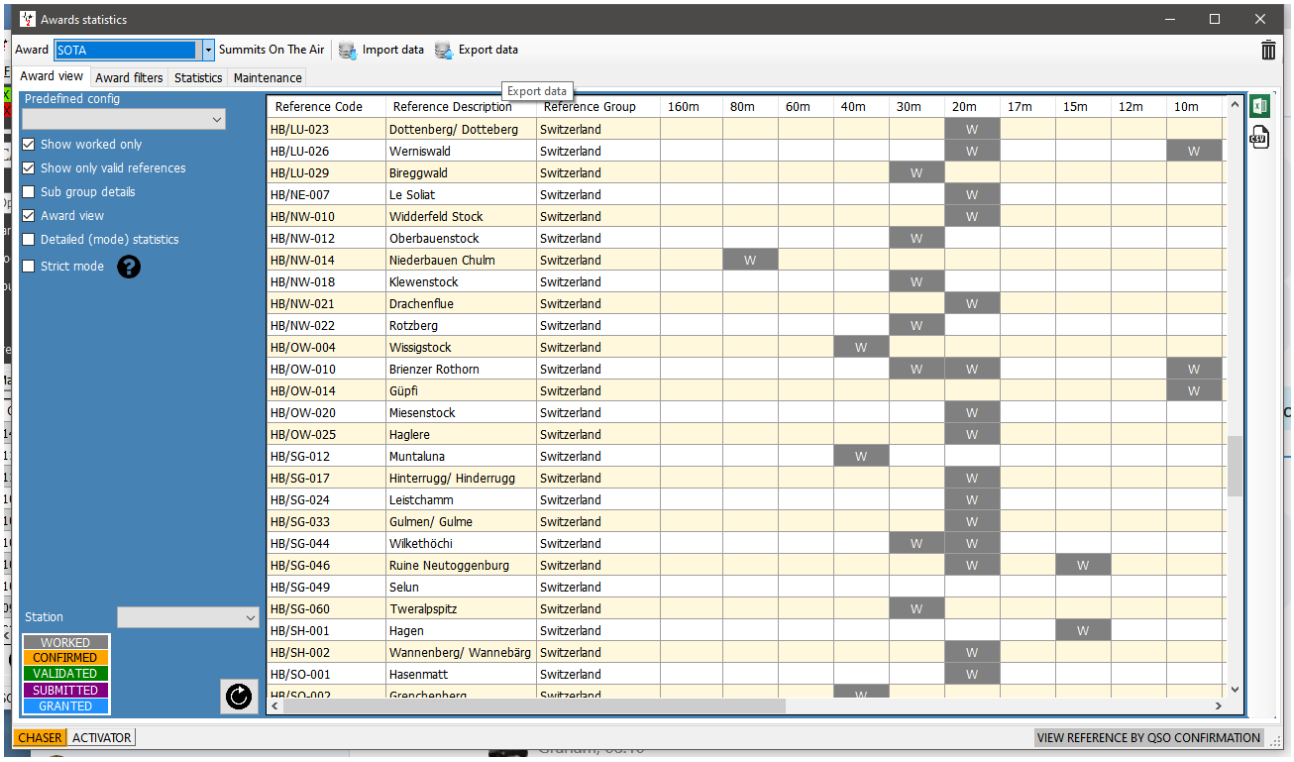
3. Select the ‘Massive editor’ tab
4. Filter then highlight the QSO’s for editing
5. Select the required action



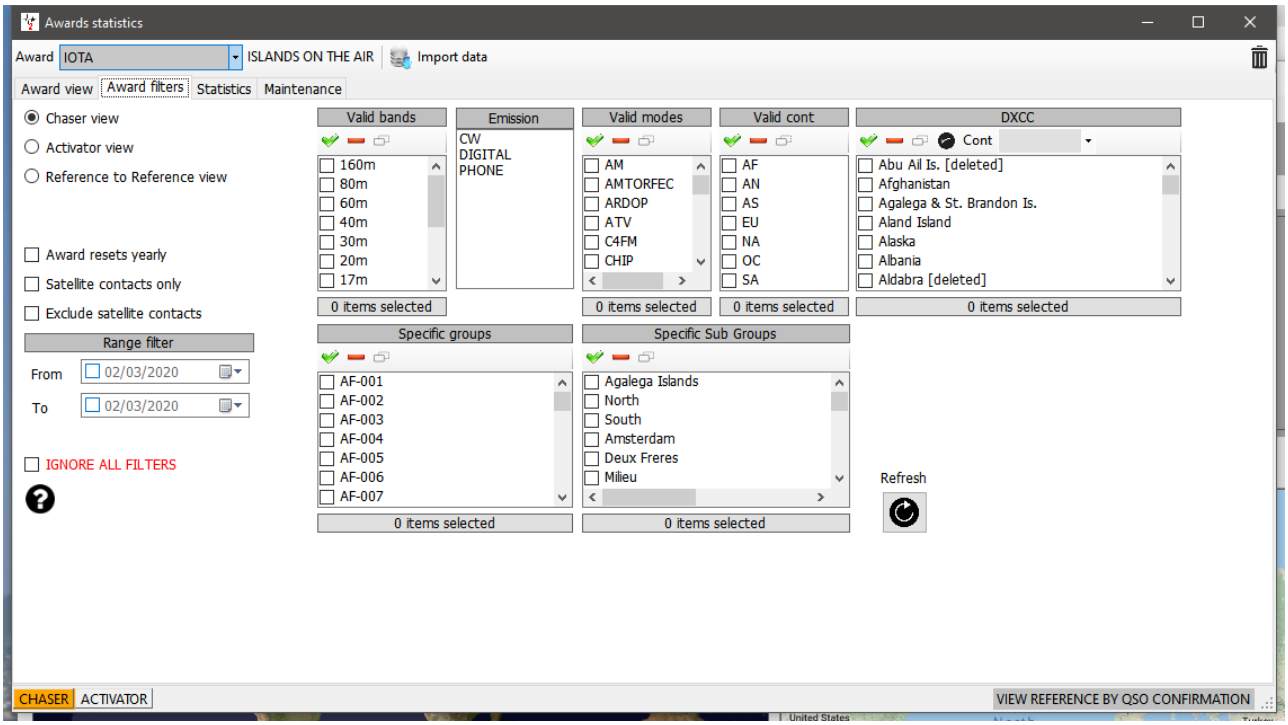
6. Click on the relevant action (Remove Granted, Set Granted, Set confirmed etc.)
7. Click ‘OK’ in the warning box to proceed

IOTA Award handling

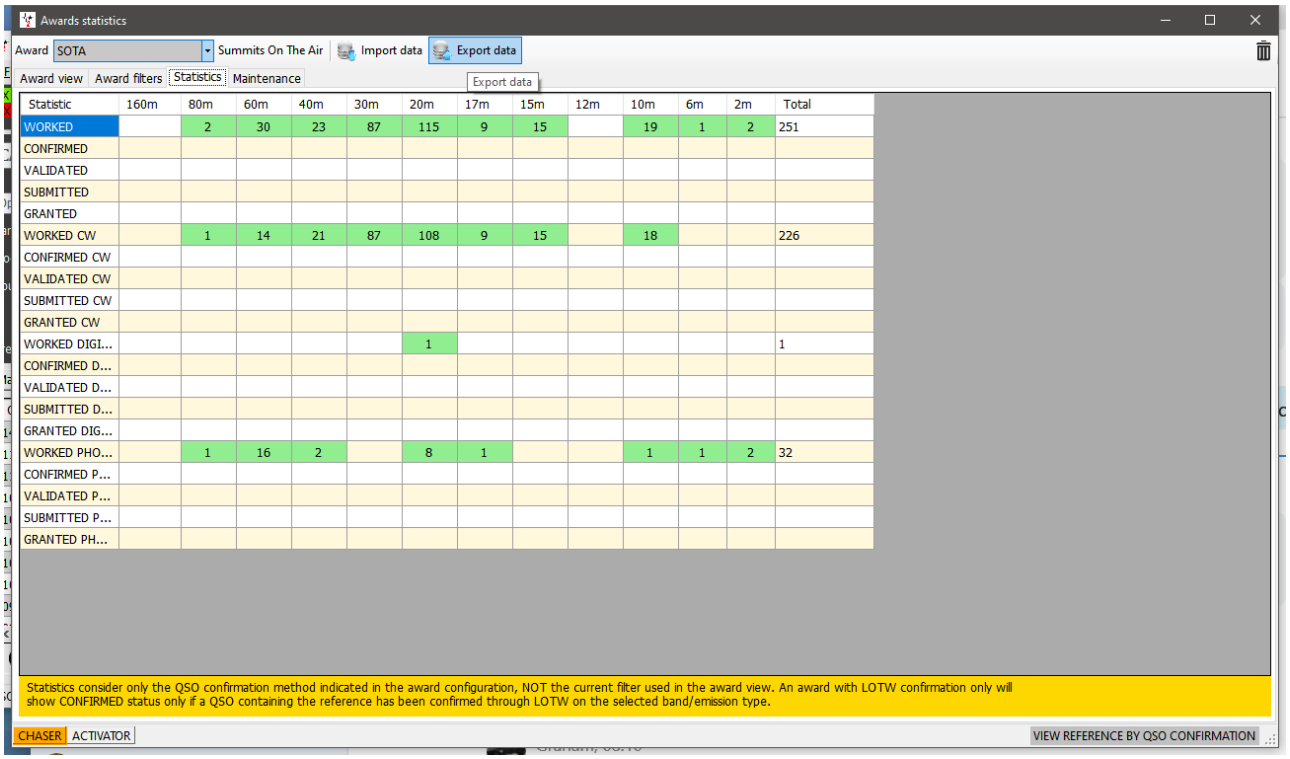
- Open the View/Award statistics screen
- Select the IOTA award from the drop down ‘Award’ menu
- To view only those islands worked check the ‘Show worked only’ check box



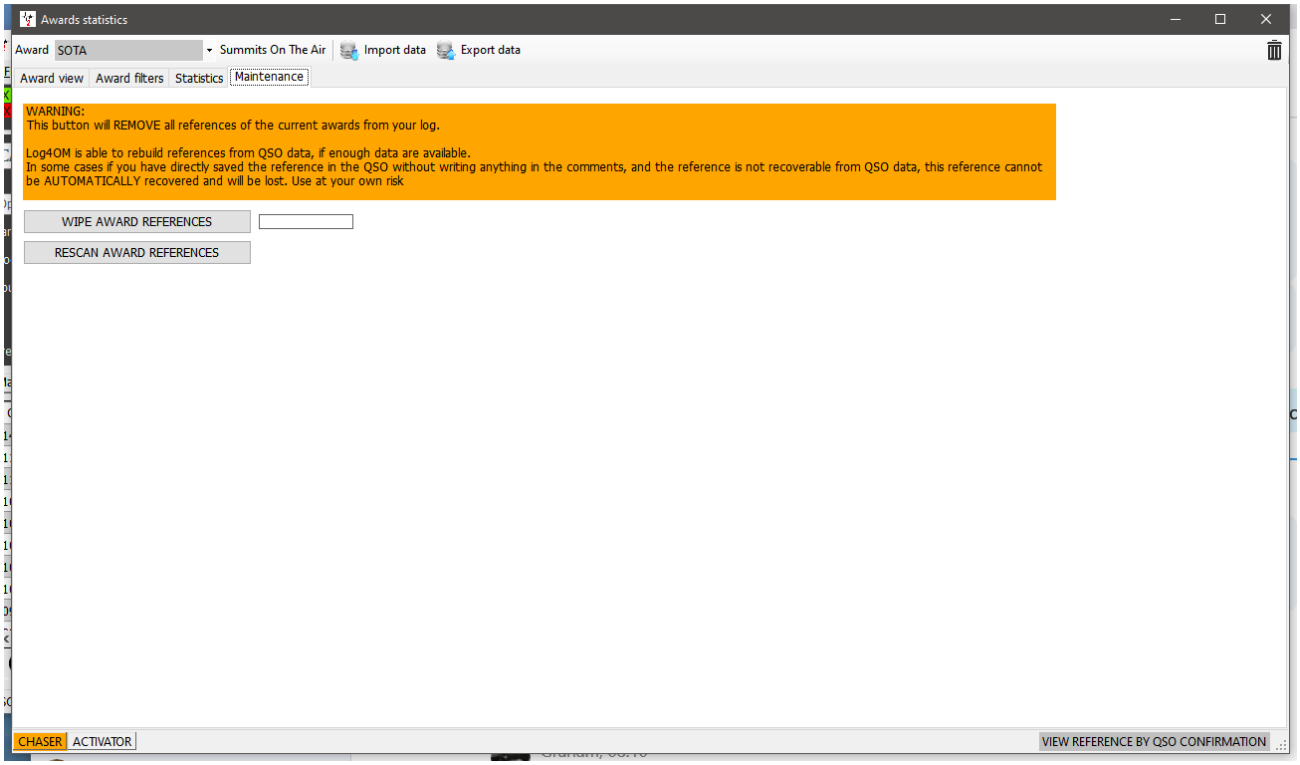
- Clicking on the ‘Award Filters’ tab provides access to a wide range of filtering opportunities
- Select the filters required and then the refresh button



- The statistics tab displays information about the number of islands worked by band, mode and confirmation status.



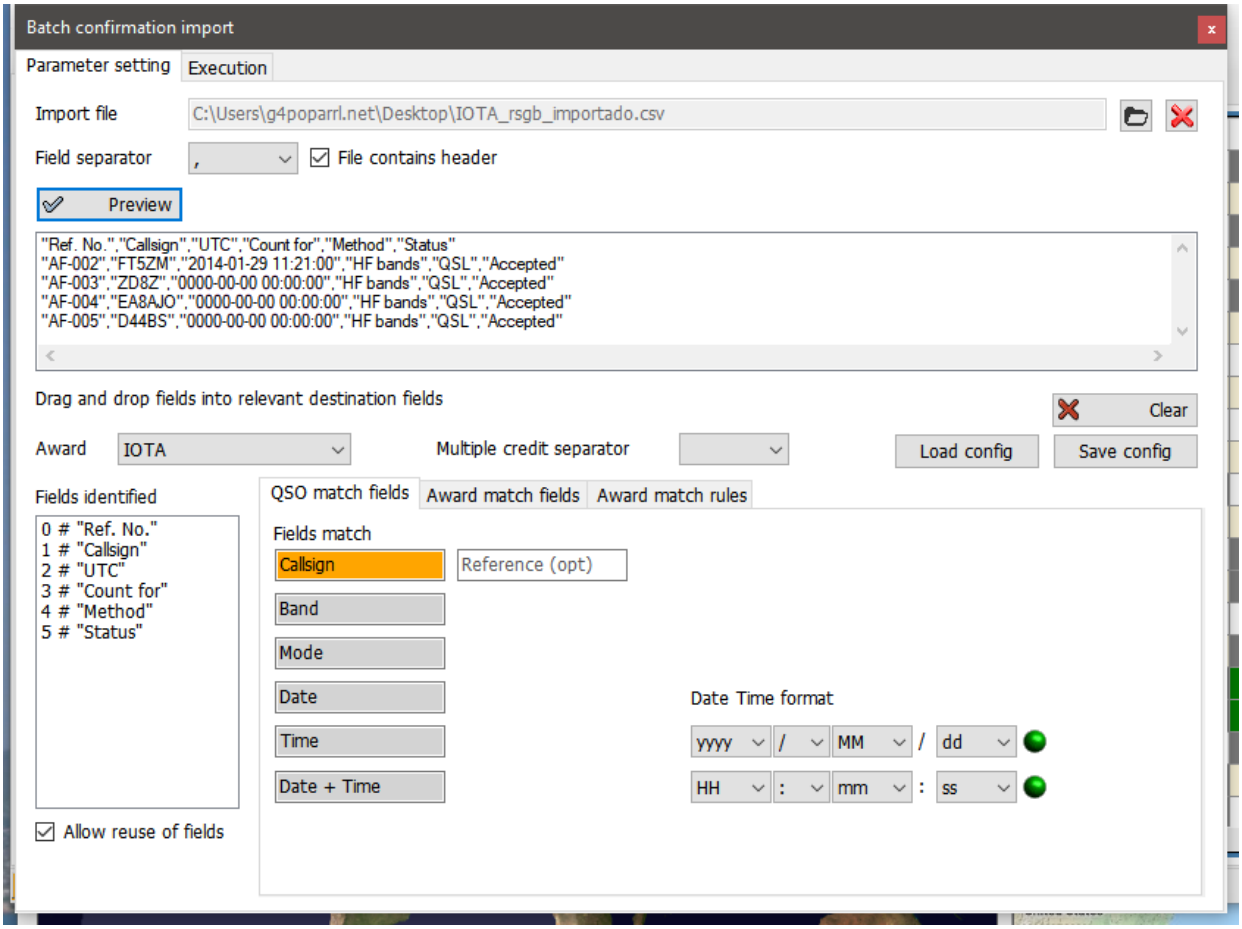
- On occasion it may be required to rescan the award references, and this can be done from the 'Maintenance' tab.



Updating using the IOTA CSV download file

IOTA provide a CSV download of the users QSO awards status in csv (Comma separated value) format and that file can be merged with the users Log4OM logbook to update the Validated or Granted status.

- In the IOTA award window click the ‘Import data’ button on the top tool bar
- Select the csv file previously downloaded from the IOTA web site
- Select the (,) Comma field separator from the ‘Field separator’ drop down menu
- Check the ‘File contains header’ box
- Click ‘Preview’

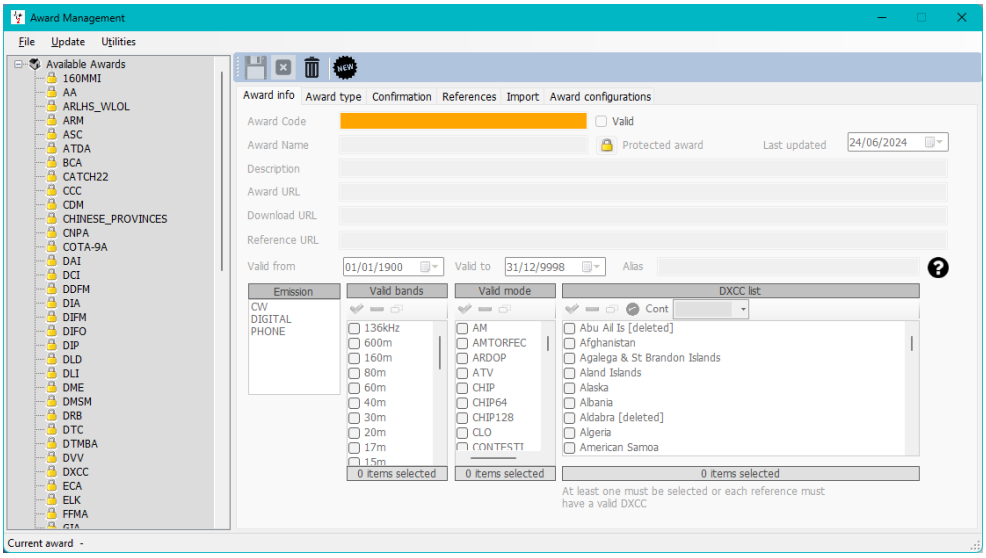


Updating modified award references

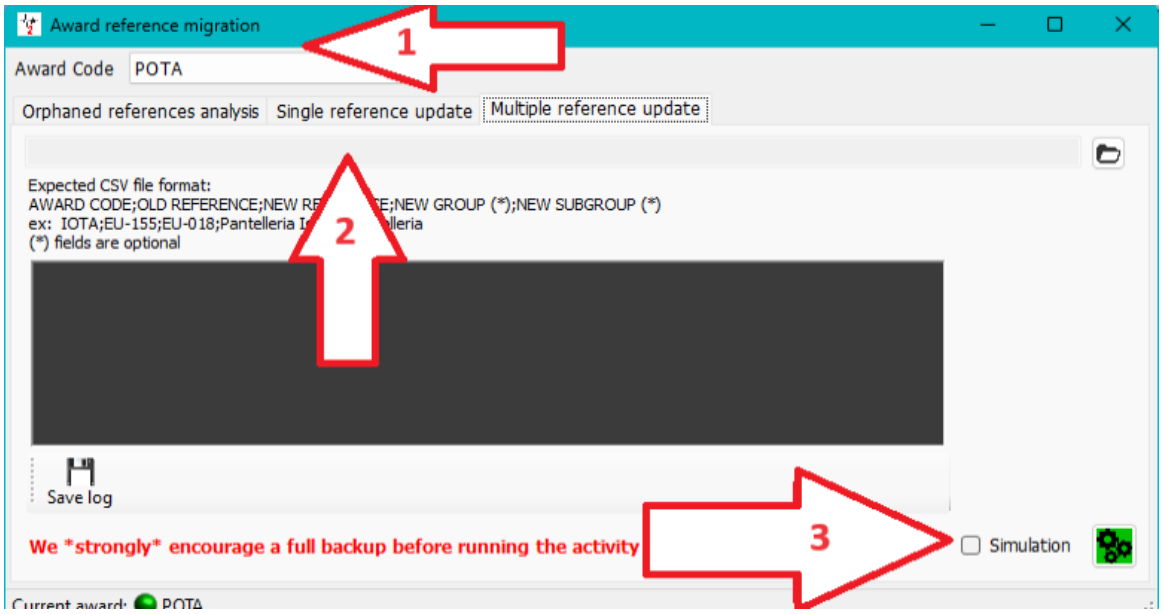
From time-to-time award providers change the style of the award references, recently an award organisation changed their award references but unfortunately did not provide a table for cross referencing the old reference with the new one, further they omitted any method of relating the reference to the country/entity because they removed the country prefix and did not provide a DXCC entity reference.

Fortunately, Log4OM has provided a method of migrating old award references previously logged against historic QSO's to the modified references.

In the Utilities/award manager screen, select 'Utilities'



1. Select 'Reference Migration' and choose the 'Award code' to be updated
2. Select the type of update or analysis– For multiple references update choose the csv file provided by the award provider by clicking the browse icon on the right (Looks like a folder)
3. Click the gear icon to activate changes of a simulation



<u>BE AWARE</u> – Updating multiple references could take hours depending on how many references are contained in the award organisers csv file.

Missing CSV import data

The IOTA CSV is not very comprehensive and difficult to match to logged QSO's because it does not contain band and mode information, this is further complicated where some entries in the CSV file do not contain a date or time of QSO. Log4OM provides a match where there is only one QSO with that particular call sign but in the event of a station being worked on several bands the choice is left to the user to either ignore (Be strict in matching) or mark all (Releaxed) as follows.

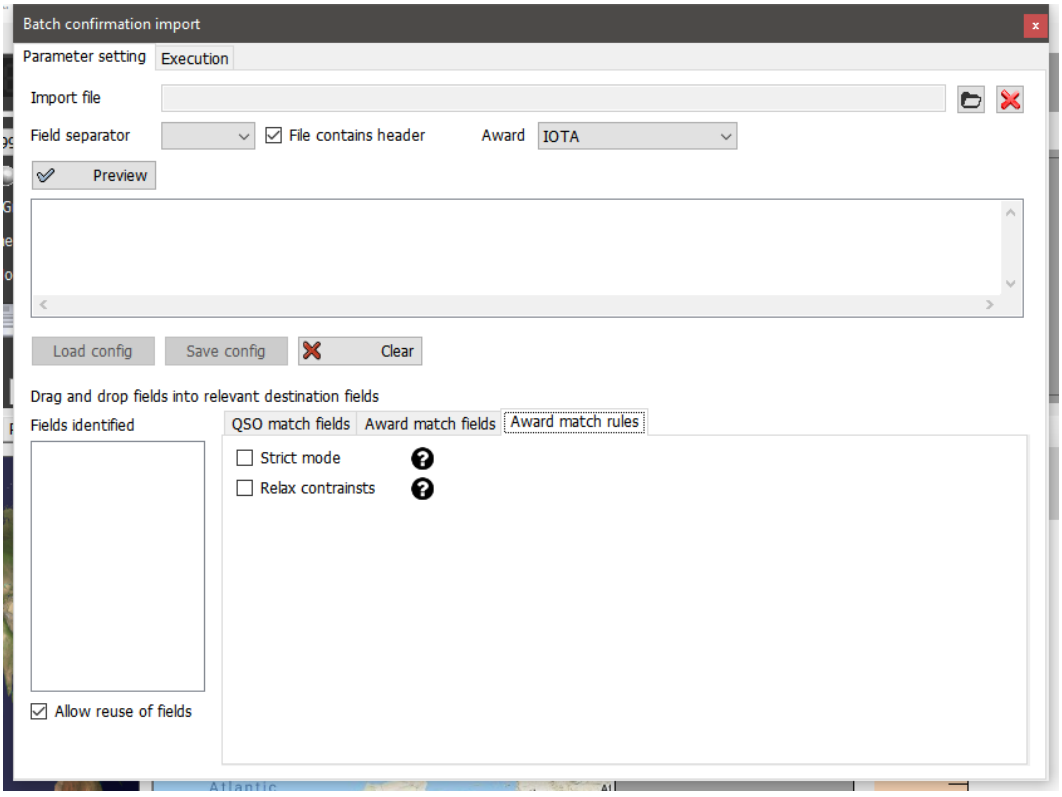
Strict mode:
Updates ONE AND ONLY ONE QSO per row. If multiple QSO are found with the parameters, it will NOT update anything.

Relax constraints:
When one or more SEARCHING PARAMETERS are invalid (e.g. iota DATE is 00-00-0000) the application will NOT UPDATE anything. If the Relax constraints flag is set, one or more missing parameters are IGNORED.

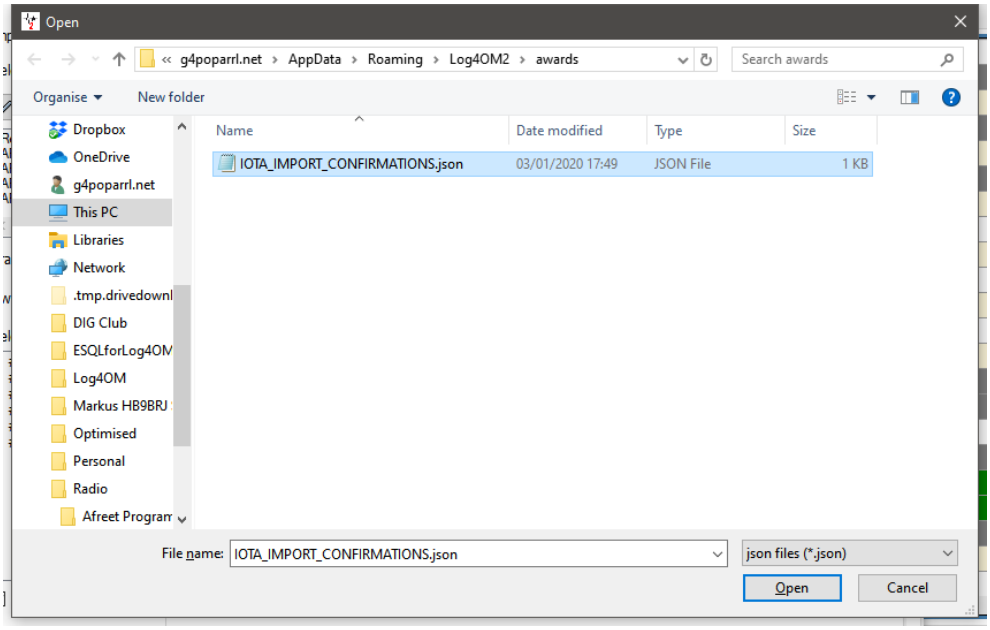
Selecting both STRICT MODE and RELAX CONSTRAINTS means:

'Update only ONE QSO per row. If one parameter is missing, ignore it. but still allow update of only one QSO per row'

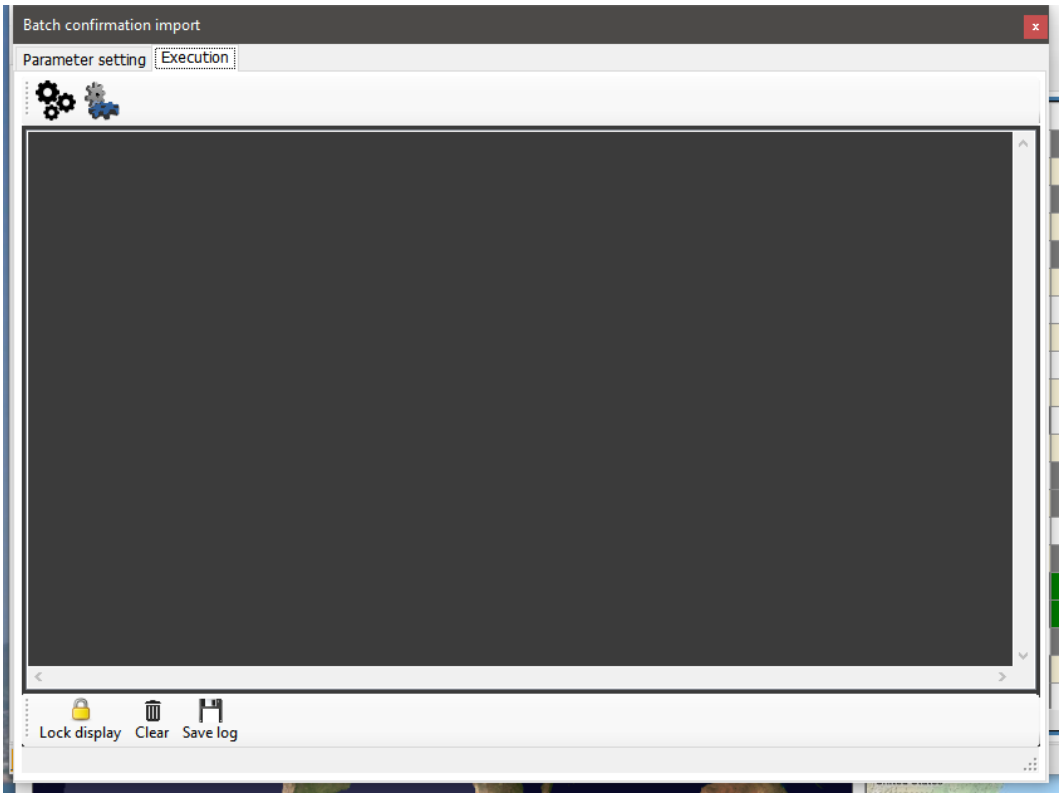
The IOTA import works with both selected, because it will ignore an invalid date (00-00-0000) but will match the QSO only if the callsign matches and there is only one QSO with this callsign.



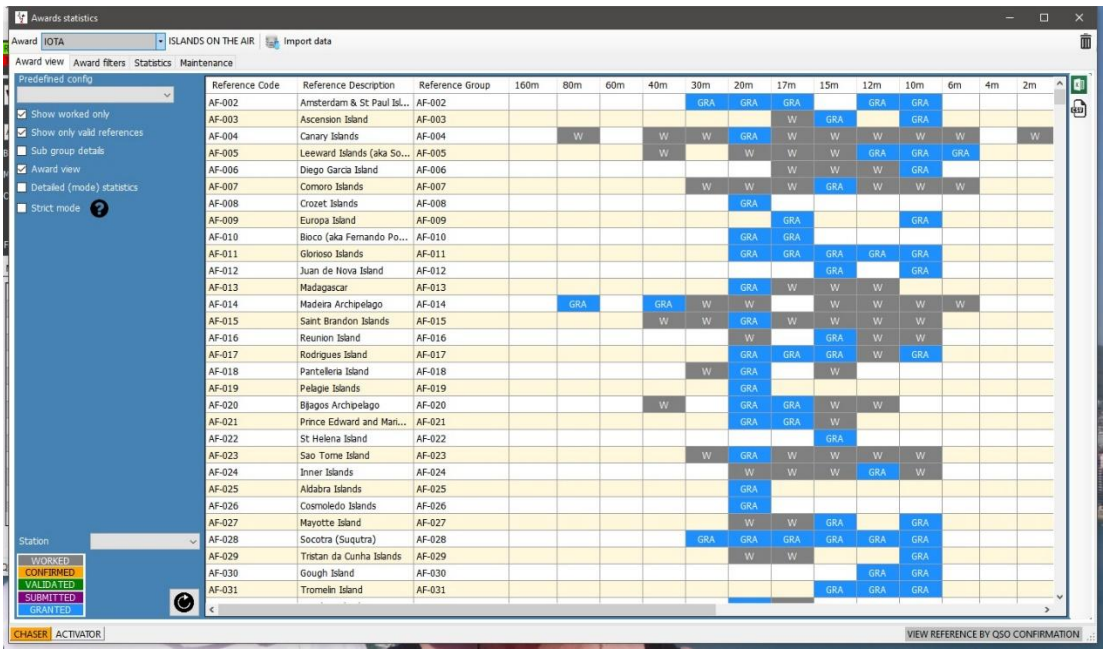
- Click on the ‘Load config’ button and select the ‘IOTA_IMPORT_CONFIRMATIONS.json’ file
- Click Open



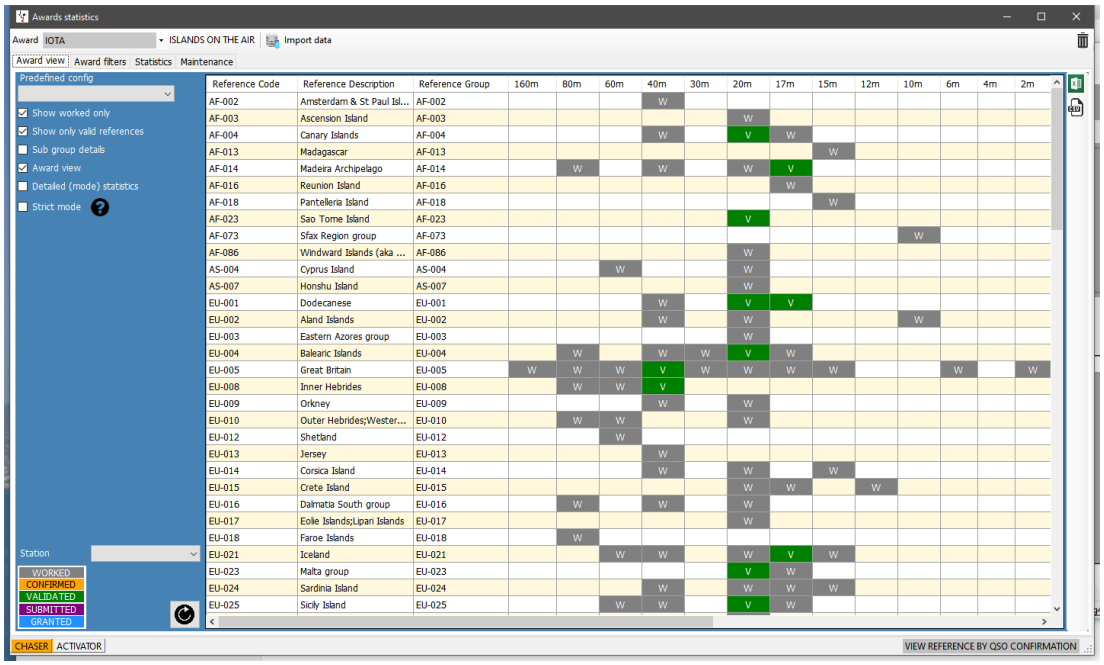
- Click the ‘Execution’ tab



- Clicking the left hand ‘Gear’ icon will simulate the merge action without modifying the users logbook.
- Clicking the right hand ‘Gear’ icon will import and merge the data to the user’s logbook
- When the merge has completed close the import window and click the refresh button in the main IOTA Award view.



View after importing an IOTA csv file showing Granted QSO's



View after importing an IOTA csv file showing validated QSO's

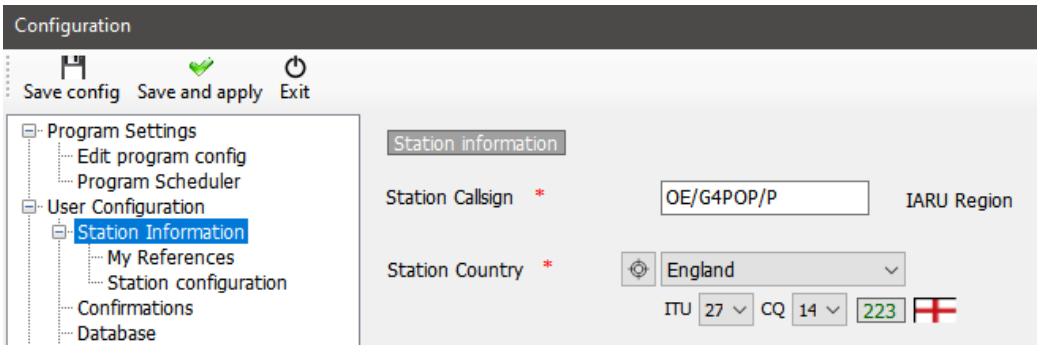
SOTA Awards

There are occasions where an operator is activating a summit in another country, because the SOTA summit list is filtered by call sign it will display only references for the country of the actual call sign, not the prefix in use.

Another anomaly is when the activator is in one country but because of location is activating a summit in the adjacent country.

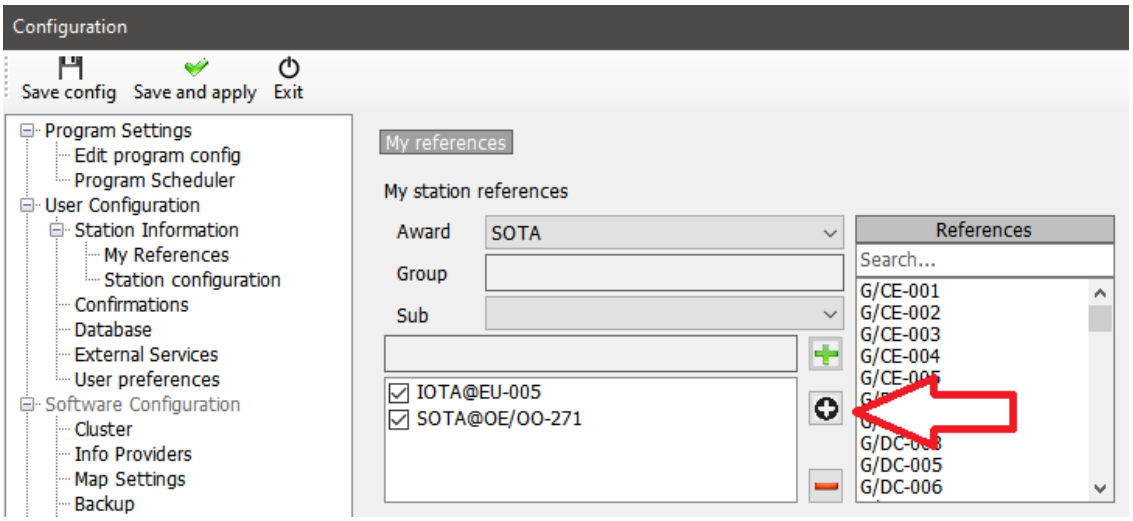
In these instances, use the procedure detailed below to enter the activation reference:

1. Change the station call sign in Settings/Program Configuration/station information e.g. OE/G4POP/P



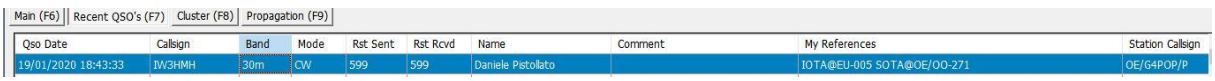
2. In the Settings/Program Configuration/station information/My References selected the SOTA award.

3. Because the list of SOTA references are filtered by the call sign prefix to display just references for that Call sign the required reference may not be listed. Click the Black + (Plus or Add) sign - Enter the Reference then press the enter key on the PC keyboard. That ref will appear in the references box bottom left.



4. Click save and apply

When a contact is made this is the resultant QSO log entry with the correct My SOTA reference and station call sign.

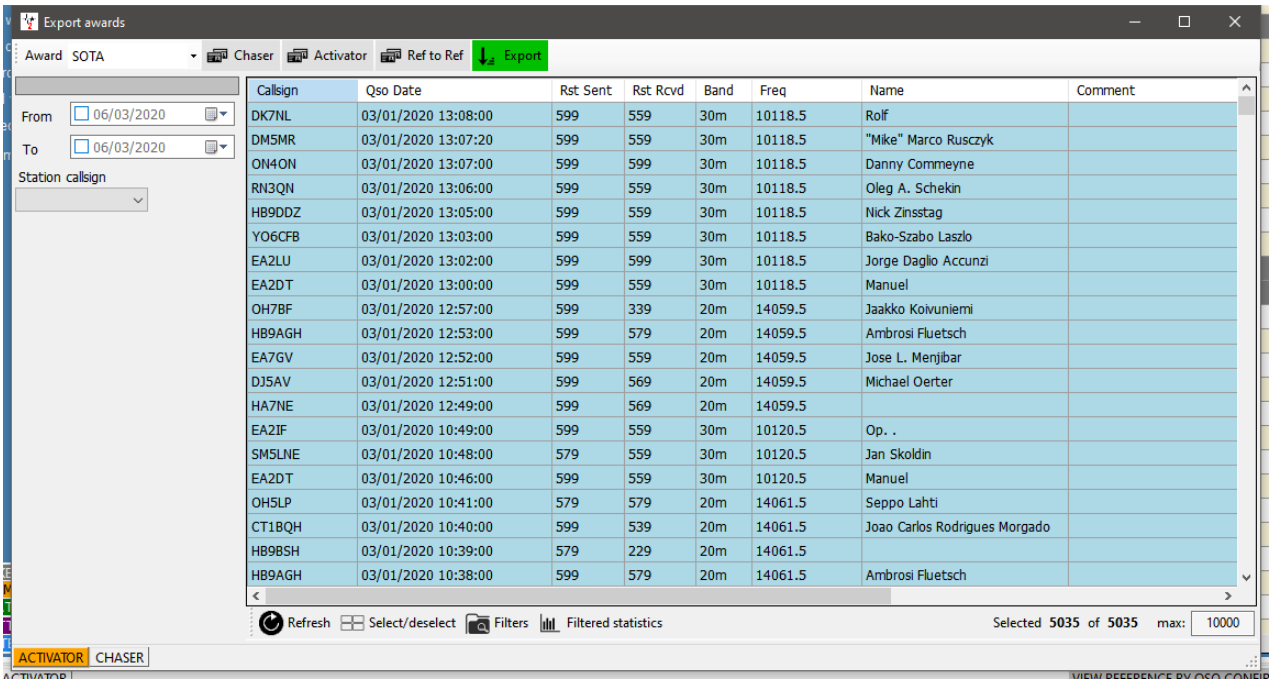


NOTE: After entering the activation QSO's edit the station call sign in Settings/Program Configuration/station information and then uncheck the OE/OO-271 box in Settings/Program Configuration/station information/My References and click save and apply

Exporting SOTA QSO's

Log4OM provides a csv export facility to provide correctly formatted files which can be imported to the on-line SOTA database.

- Click the 'Export data' button at the top of the SOTA Awards screen
- Select 'Chaser', 'Activator' or 'Ref to Ref' (S2S)
- Set a date range if required
- Select the 'Station callsign' required
- Click 'Select/deselect' at the bottom of the window to select the QSO's for export or individually select QSO/s
- Click the GREEN Export button and select a location to save the csv file



Callsign	Qso Date	Rst Sent	Rst Rcvd	Band	Freq	Name	Comment
DK7NL	03/01/2020 13:08:00	599	559	30m	10118.5	Rolf	
DM5MR	03/01/2020 13:07:20	599	559	30m	10118.5	"Mike" Marco Rusczyk	
ON4ON	03/01/2020 13:07:00	599	599	30m	10118.5	Danny Commeyne	
RN3QN	03/01/2020 13:06:00	599	559	30m	10118.5	Oleg A. Schekin	
HB9DDZ	03/01/2020 13:05:00	599	559	30m	10118.5	Nick Zinsstag	
YO6CFB	03/01/2020 13:03:00	599	559	30m	10118.5	Bako-Szabo Laszlo	
EA2LU	03/01/2020 13:02:00	599	599	30m	10118.5	Jorge Daglio Accunzi	
EA2DT	03/01/2020 13:00:00	599	559	30m	10118.5	Manuel	
OH7BF	03/01/2020 12:57:00	599	339	20m	14059.5	Jaakko Koivuniemi	
HB9AGH	03/01/2020 12:53:00	599	579	20m	14059.5	Ambrosi Fluetsch	
EA7GV	03/01/2020 12:52:00	599	559	20m	14059.5	Jose L. Menjibar	
DJ5AV	03/01/2020 12:51:00	599	569	20m	14059.5	Michael Oerter	
HA7NE	03/01/2020 12:49:00	599	569	20m	14059.5		
EA2IF	03/01/2020 10:49:00	599	559	30m	10120.5	Op. .	
SM5LNE	03/01/2020 10:48:00	579	559	30m	10120.5	Jan Skoldin	
EA2DT	03/01/2020 10:46:00	599	559	30m	10120.5	Manuel	
OH5LP	03/01/2020 10:41:00	579	579	20m	14061.5	Seppo Lahti	
CT1BQH	03/01/2020 10:40:00	599	539	20m	14061.5	Joao Carlos Rodrigues Morgado	
HB9BSH	03/01/2020 10:39:00	579	229	20m	14061.5		
HB9AGH	03/01/2020 10:38:00	599	579	20m	14061.5	Ambrosi Fluetsch	

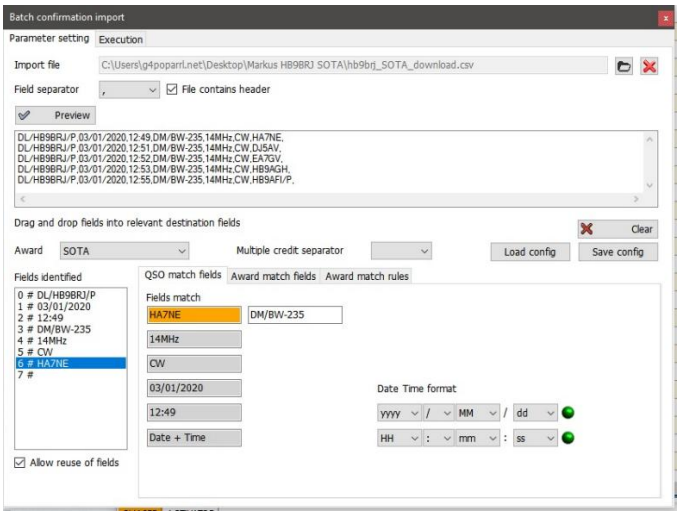
Exporting SOTA QSO's as an ADIF file

SOTA now provides an ADIF import facility, suitable ADIF files can be exported from the Log4OM QSO Manager

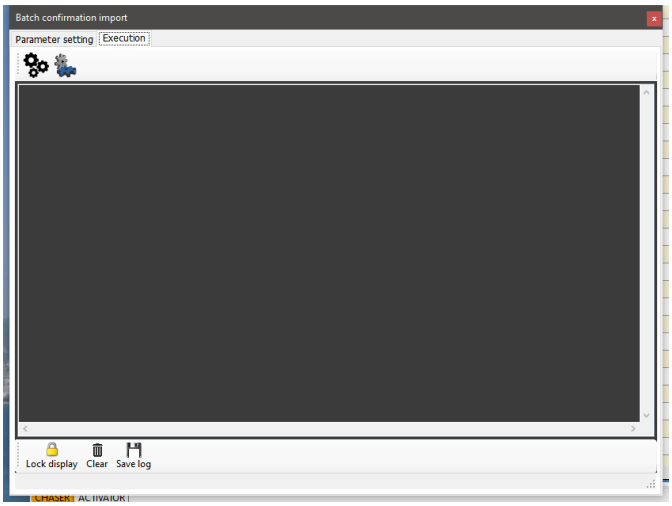
Importing (Merging) a SOTA CSV file

A downloaded SOTA CSV files can be merged into Log4OM as follows:

- In the SOTA Awards screen select the ‘Import data’ button at the top of the window
- Select the file to be imported
- Set the field separator (Usually a comma (,)
- Click the ‘Preview’ button to preview a sample of the file for importing
- Click the ‘Load config’ button and load the preconfigured SOTA Import config file



- Click the ‘Execution’ tab at the top of the window



- Clicking the left hand ‘Gear’ icon will simulate the merge action without modifying the user’s logbook.
- Clicking the right hand ‘Gear’ icon will import and merge the data to the user’s logbook
- When the merge has completed close the import window and click the refresh button in the main SOTA Award view.

The verified and Granted status will now be displayed for those QSO’s updated by the import

NOTE:

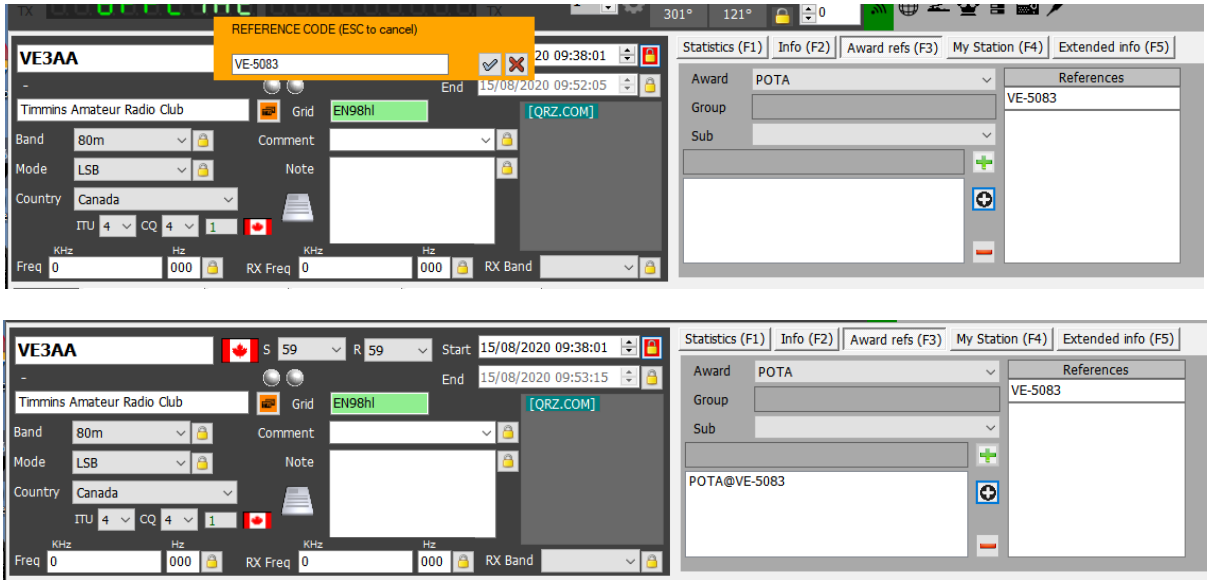
This is a MERGE (Update) function it does not add QSO’s to the logbook that do not exist in the logbook it is used to UPDATE existing records.

Adding missing award references

It is impossible for the Log4OM awards manager to keep every set of award references up to date because they constantly change and there are thousands of them, he updates them as regularly as possible but occasionally the user may not be able to find the reference required.

In that event follow the instructions below.

1. Enter the call sign of the station being worked or open the QSO edit window for an existing QSO
2. In the 'Awards refs' tab, select the award required.
3. Click the black plus sign (+)
4. In the orange dialog box that appears type in the award reference
5. Click on the 'Check' mark to add the reference or the red cross to abort
6. Save the QSO/Edit



Award Editor

The management of awards in Log4OM is fully customizable. It is possible to create an award in a few minutes, integrating it perfectly into the system and ready for immediately use.

Important information.

The Log4OM Awards can be of 3 types: References, QSO Fields and Call sign.

[REFERENCE TYPE AWARD]

The "REFERENCE" type awards are characterized by having a unique code for each reference that identifies it. This reference can often be found in the notes of the cluster or it can be entered by hand, it can also be derived from a lookup on an external system (e.g. QRZ.COM) or it can be automatically retrieved by Log4OM from the notes of a previously imported QSO.

Example of REFERENCE type awards are:
World Wide Flora & Fauna award reference: IFF-1369
IOTA award reference: EU-166
World Castles award reference: I-12874

[QSO FIELDS]

"QSO FIELDS" provide award data automatically, the information is retrieved automatically from the standard QSO data that is collected and saved at the time a QSO is recorded. These awards are not visible in the main user interface of the program (Awards reference fields in the F3 tab of the QSO input window), because they are automatically derived by analyzing the normal QSO data.

In order to create a QSO FIELDS award it is necessary to indicate a field among those available, which will be used by the program to search for references used in the calculation of the award.

Examples of QSO FIELDS awards are:
DXCC award: This award is based on the 'DXCC' field
WAS award: This award is based on the STATE field
WORKED ALL ITALIAN PROVINCES AWARD: This award is based on the abbreviation of the province contained in the ADDRESS field.

To limit the number of "false contacts" it is possible to limit the Award to work only on the DXCCs for which the award is valid.

e.g. Filtering an award by DXCC entity numbers 291, 110 & 6 and the STATE field provides the WAS (Worked all States) award results, only for the United States of America, Hawaii and Alaska.

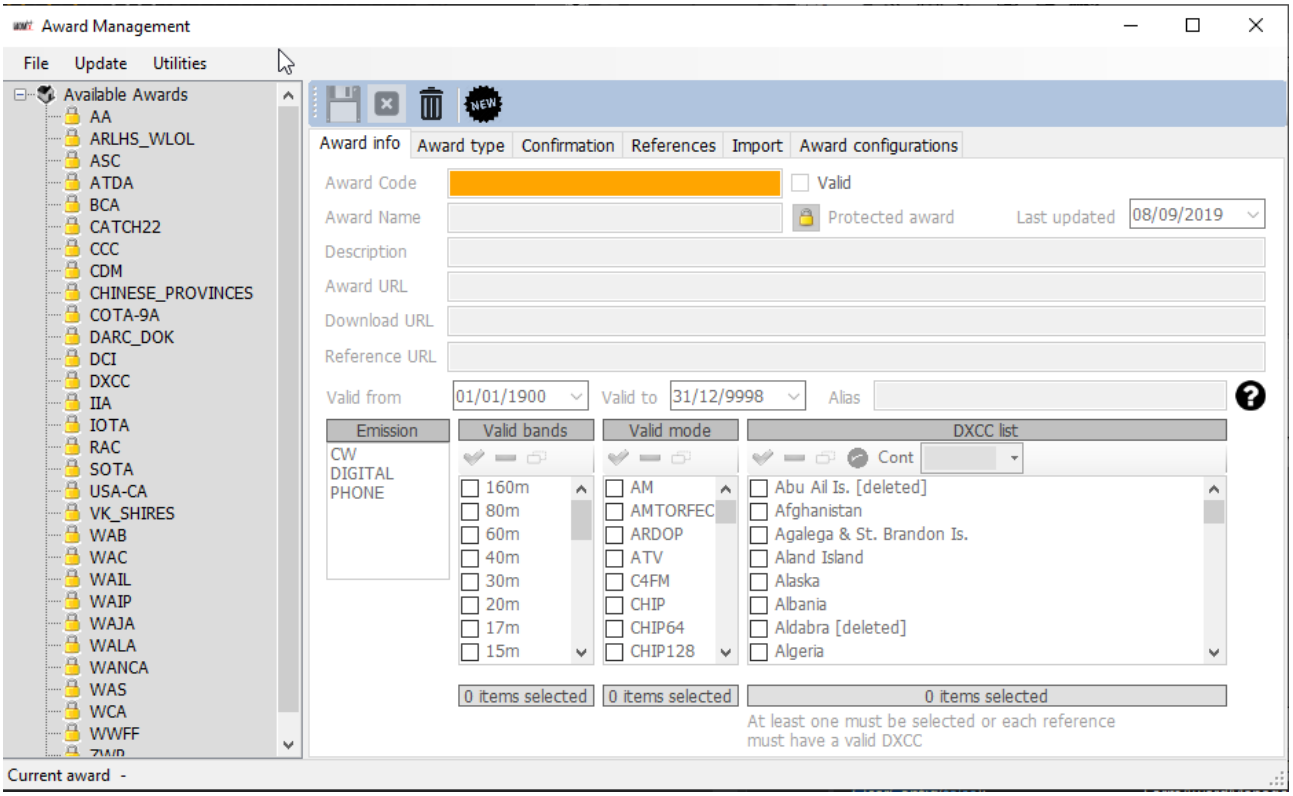
In the case of the WAIP (Worked all Italian Provinces) award will be filtered by DXCC entity number 248 and the STATE field to provide just results for WAIP

[CALLSIGN TYPE]

A CALLSIGN award uses the QSO contact's call sign to retrieve any references. It is also possible to operate on parts of the call sign (e.g. on the prefix).

An example of CALLSIGN awards are the commemorative awards, where there are several stations and the connection with these stations, from the known call sign or specific special prefix e.g. GB500nnn, produces useful references for achieving the award.

Award management usage



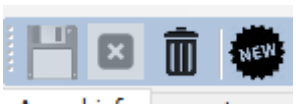
In the area to the left of the screen users will find the awards available in Log4OM. The number of awards will increase over time, the program will be automatically updated with revised versions of existing awards and new awards will be added periodically.

The padlock symbol indicates that the award is PROTECTED, i.e. that it is an award which is managed by the Log4OM team. This does not prevent users from editing it or adding references, however such edits and additions will be overwritten automatically with new program updates therefore users are advised to backup their awards file to another folder.

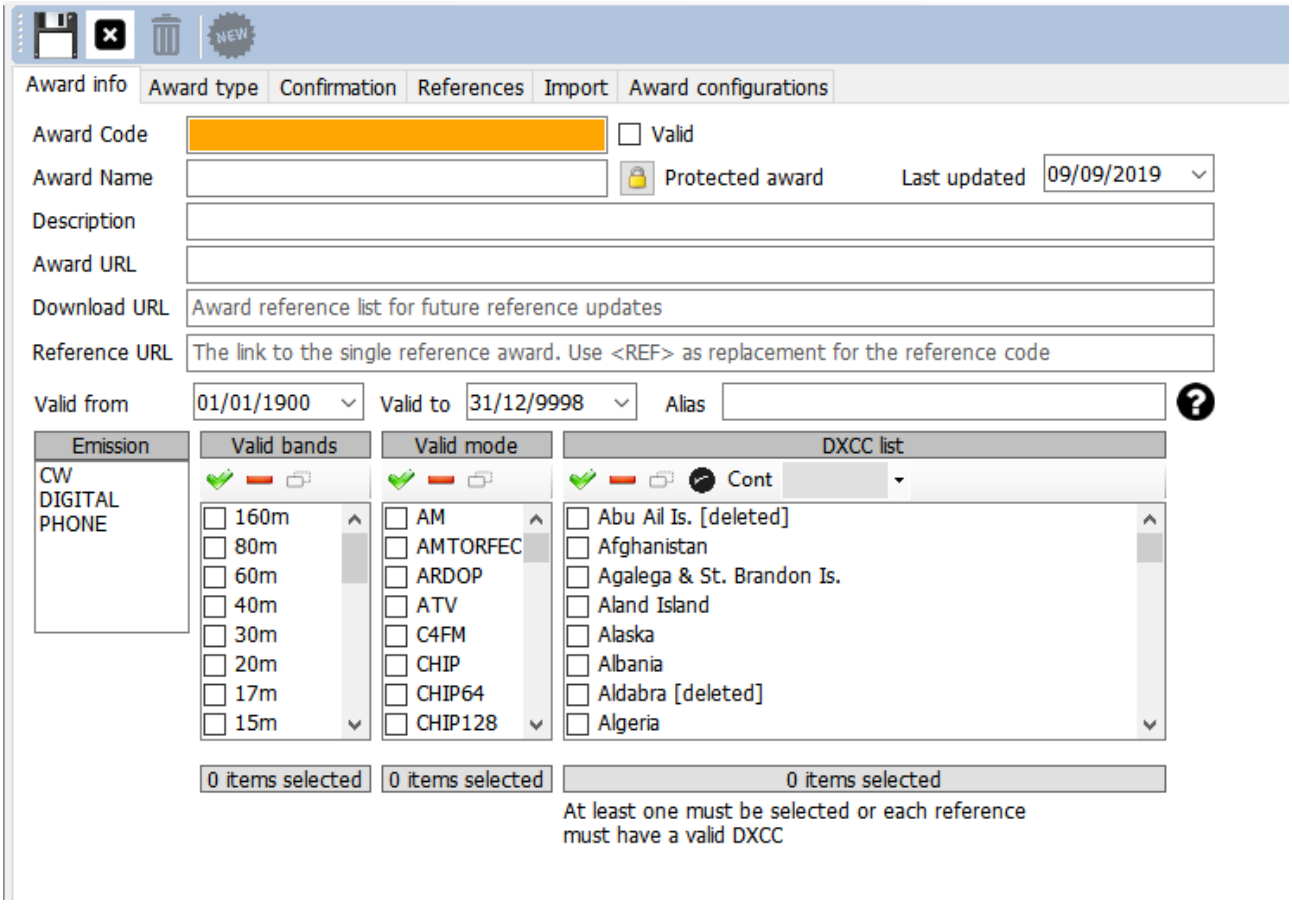
In the area on the right is the management area for the individual awards.

Icon toolbar functions:

Save current award | Cancel edit | Delete award | New award



Award Info



Award Code: Is the award key of the award. References are saved in the form <AWARD CODE>@<REFERENCE CODE>. This key is unique in the awards list. No duplicates are allowed.

Valid: If checked, the award is valid and can be used by Log4OM

Award Name: The user friendly name of the award.

Description: A brief description of the award characteristics

Award URL: The award home page web address

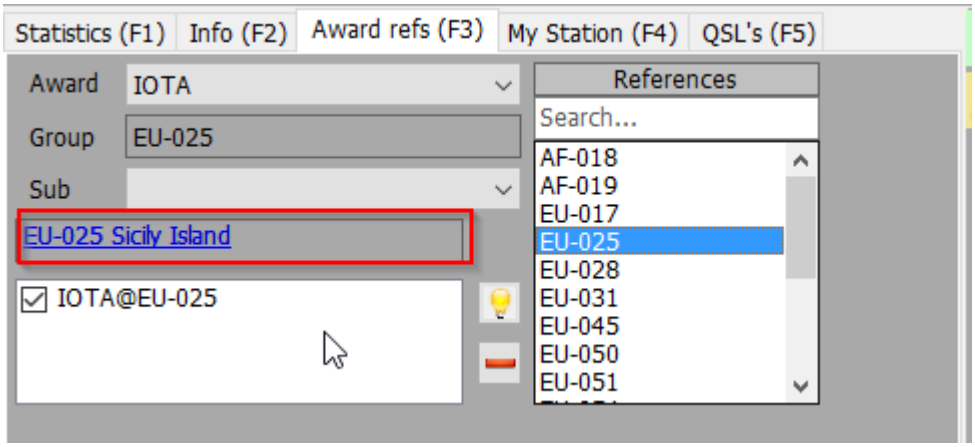
Download URL: [RECOMMENDED] Contains the page where the awards references can be retrieved. Useful for award managers to find reference lists to be updated.

Reference URL: If the award has a webpage that allows users to lookup the reference, this is the place where users should put the Web page address. Replace the reference code with <REF>. Log4OM will place the current reference at runtime.

As example, for IOTA: https://www.iotamap.org/grpref/<REF>

(https://www.iotamap.org/grpref/EU-025)

A hyperlink will be placed in award reference screen as below:

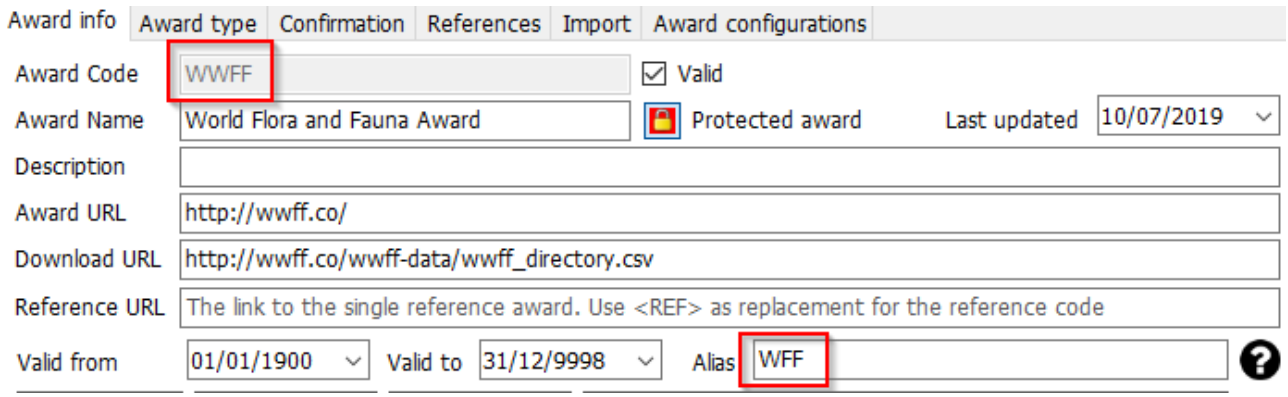


Valid From and Valid To: This is the valid period of the award. QSO outside this range will not be considered.

For awards that change references yearly users must use "AWARD CODE" + YEAR format in the award code field, so users will not lose their old references for previous participations to those awards.

Alias: If an award will change his name users may want to change his award code. Old QSO will be accepted and assigned to this award if their references matches the award code OR the award alias.

An example: WFF (World Flora Fauna) changed its code (and references) from WFF to WWFF. Log4OM V1 has references in format WFF@IFF-123, Log4OM V2 has the award code changed to WWFF. Log4OM added an alias to WFF in order to automatically convert old references into new.



Emission: Valid emission types for this award. QSO's which are not made in the emission type selected are not considered for the award and the award will not be listed in the available awards for the contact.

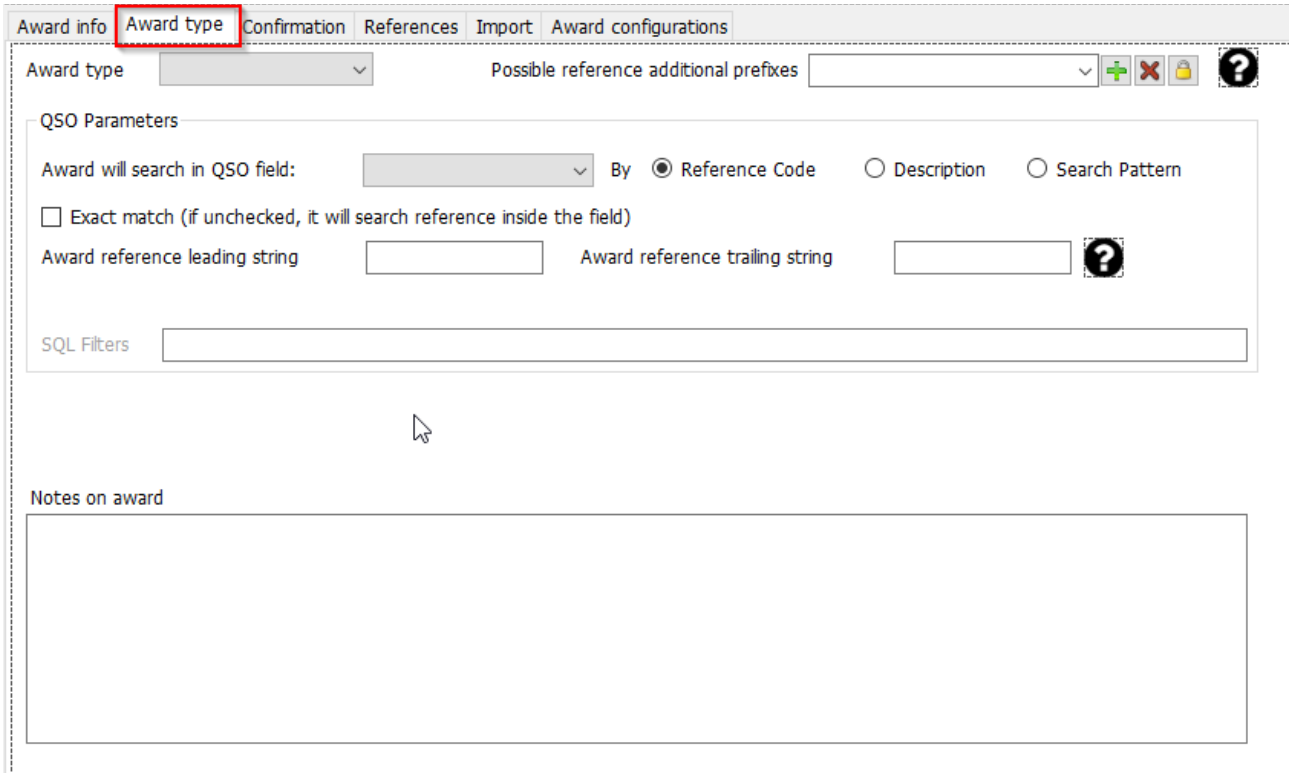
Valid emission types are: CW, DIGITAL, PHONE. At least one must be selected.

Valid Bands / Valid Modes: Users can limit bands and modes for the award by selecting specific bands and modes, if nothing is selected all bands, and/or, all modes are valid.

DXCC List: The list of the DXCC where this award is valid. Country specific awards must have the country DXCC set. At least one DXCC must be selected.

HINT: Log4OM is able to retrieve DXCC list from references itself, where DXCC field is mandatory (at least one for each reference, multiple allowed). If Log4OM is not able to find a list of valid DXCC for the award from the award DXCC list or from the reference list (because reference list is empty), the award will not be saved.

AWARD TYPE



Possible reference additional prefixes

Some awards have references mapped with strings that are not usually the same as those used when an operator spots a call sign on the cluster.

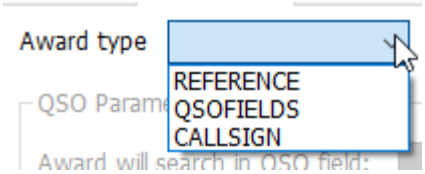
As an example, DME award has references in form “045678”. Usually those references are mapped as DME-045678

Using its internal logic, Log4OM compares “45678” with “DME-45678” and “DME45678” coming from the spot, and would not find a match in this case. However, if in the “Possible additional prefixes” for the DME Award, the user inserts the string “DME”, Log4OM will try to find a match:

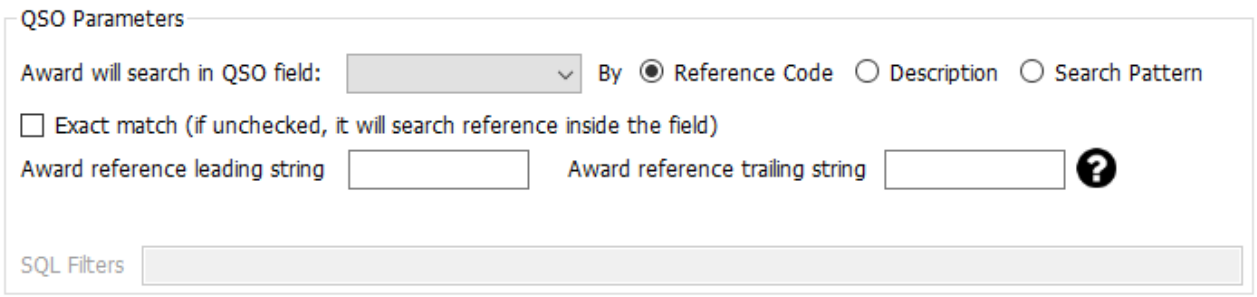
It will associate “45678” with “DME45678” but also the opposite way it will associate “DME45678” with “45678”, thus obtaining a positive match for the award.

Award type

This field require one value. REFERENCE, QSOFIELDS or CALLSIGN.



If QSOFIELDS is selected, some options become available



QSO Field

Contains the list of QSO fields that the award may explore. Users can select only one of them (and at least one, if QSOFIELDS award type is selected)

Search by: this will indicate to Log4OM what part of the reference must be searched in the field.

Reference code

Log4OM will search for the reference code in the indicated field. As example: Award DXCC, field is DXCC and this field is searched by Reference Code (the DXCC number)

Description

If an award is searching for a string in a field, and this string is not the reference code itself but the description, users must select By Description. Log4OM will search this inside the QSO field, instead of reference code.

As an example: an award will grant users a reference for each QSO made with operators with Judi, Michael and David in the operator name, and reference code are J for JURI, M for Michael and D for David.

In this case Log4OM will search the field: NAME for Michael, David or Judi and will assign according reference code to the QSO, that are the J, D and M reference descriptions

By Search Pattern: Users can use a regular expression to search inside the field for the required string. When matched, the award reference is assigned (Award reference must have a valid search pattern set)

Exact match

If checked, the field must be EXACTLY the reference code or the description selected. If unchecked, the field will be parsed successfully if contains reference code or description.

Reference leading and trailing.

Assume users have an award that is scanning for ITALIAN PROVINCES.

Italian provinces are made by 2 letters, usually enclosed in brackets. WAIP award is made to scan address field searching those letters, but those 2 letters may appear everywhere in the address and Log4OM must be sure to catch only the address that contains the province. In Italy, usually, address is in the form:

Roma street, 164/G
30020 – Quarto D'Altino (VE)
Italy

Province, in this case, is VE, and reference is VE. A search by reference code without exact match will easily find this address as belonging to VE province (and it's correct).

However another address will also match…

Example: Venezia Street, 30 - 00100 Rovigo (RO) - Italy

Here, a scan of the address will detect **Ve**nezia (and Rovigo RO province), creating a false reference for Venice. In that case Log4OM resolves the situation by adding start and end brackets "(" and a ")" to the reference code. During scan, Log4OM will not search just for VE inside the string, but for "(VE)", catching the first reference as VENICE (VE) and the second as ROVIGO (RO)

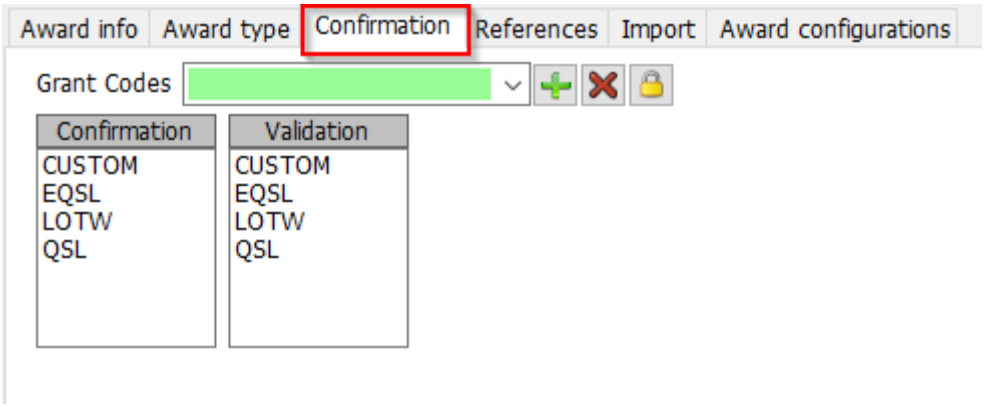
Sql Filters

Reserved for future development.

Notes on award

Here users can type everything useful on the award. As example: "send email to xyz@gmail, for an updated reference list"

CONFIRMATION



This is one of the most complex and powerful things of Log4OM.

In Log4OM a reference can assume 3 states - UNCONFIRMED, CONFIRMED or VALIDATED.

Unconfirmed means the Reference is registered but the user has not received any confirmation. As example, an award that requires a QSL to make the reference valid, has reference status UNCONFIRMED (WORKED ONLY) when the QSO is made.

Awards may have multiple kind of validations.

Some awards do not require any confirmation from the other station (activator) because the activator provides a list of QSO to the award manager, an example of this is IOTA.

Some awards will require a user to provide a QSL paper card confirmation, but they must validate them before the QSO is confirmed as valid for use to obtain the award.

Some awards will automatically grant users the qso as VALID when users receive the confirmation. As example, all EQSL awards. When users receive a QSL they automatically know that the contact is confirmed and valid for EQSL.

How these fields work:

Confirmation

What confirmation is required to have the reference confirmed? (confirmed means users can use the confirmation for further requests to the award management).

Values are: EQSL, LOTW, QSL and /or CUSTOM (multiple selection is allowed)

For IOTA the CONFIRMATION is unnecessary. Confirmation are provided by IOTA website itself in form of a downloadable file. For IOTA confirmations the users should select CUSTOM.

For DXCC a confirmation with LOTW or QSL is valid and can be used to request an award (a QSL card must be validated but it is acceptable as a confirmation). For LOTW users should select LOTW + QSL

If award require an EQSL confirmation, users should set EQSL.

Validation

What kind of validation is needed to mark a QSO validated and then useable for award request?

If award is completely managed by external organizations like IOTA, the user must set CUSTOM as the confirmation type, in this case Log4OM will **not** automatically confirm or validate user award references by monitoring arrival of QSO confirmations of any kind.

For DXCC, validation will arrive from an external data flow (LOTW file download), so Log4OM will receive this information and only when a LOTW contact is marked VALIDATED can users consider it validated (even if it's confirmed). Again, confirmation must be set as CUSTOM for LOTW, as it must not be automatically set by Log4OM on confirmation registration.

For EQSL awards, the presence of the EQSL confirmation is both confirming and granting a credit for the award itself. So users can set VALIDATION = EQSL. Log4OM will automatically set the references of this award as VALIDATED when an EQSL is received.

Special situations

Assume an award that is accepting QSL and EQSL as a confirmation. The QSL must be validated by a card checker, but they have direct access to EQSL to validate a users EQSL confirmations.

In this case users should set CONFIRMATION to EQSL + QSL / VALIDATION to EQSL + CUSTOM
When users receive an EQSL the reference will be confirmed and validated. When users receive a paper QSL the reference will be CONFIRMED and may be manually updated to VALIDATED when card checker approves it.

Grant codes:

Log4OM is able to import a text file in CSV format from any source and search for validations/confirmations in the file itself. It's also able to scan LOTW downloaded ADIF searching for peculiar LOTW fields.

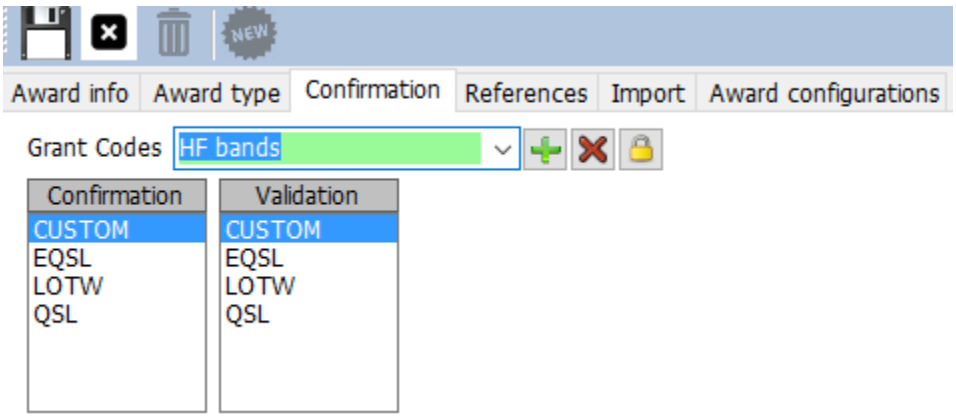
An example of award that provide confirmation / validation status in a CSV format is the IOTA program.

When users retrieve the IOTA confirmation file and pass it through Log4OM file checker, it will search for field: "count for" for the string "HF bands". This will mark the QSO CONFIRMED in IOTA.

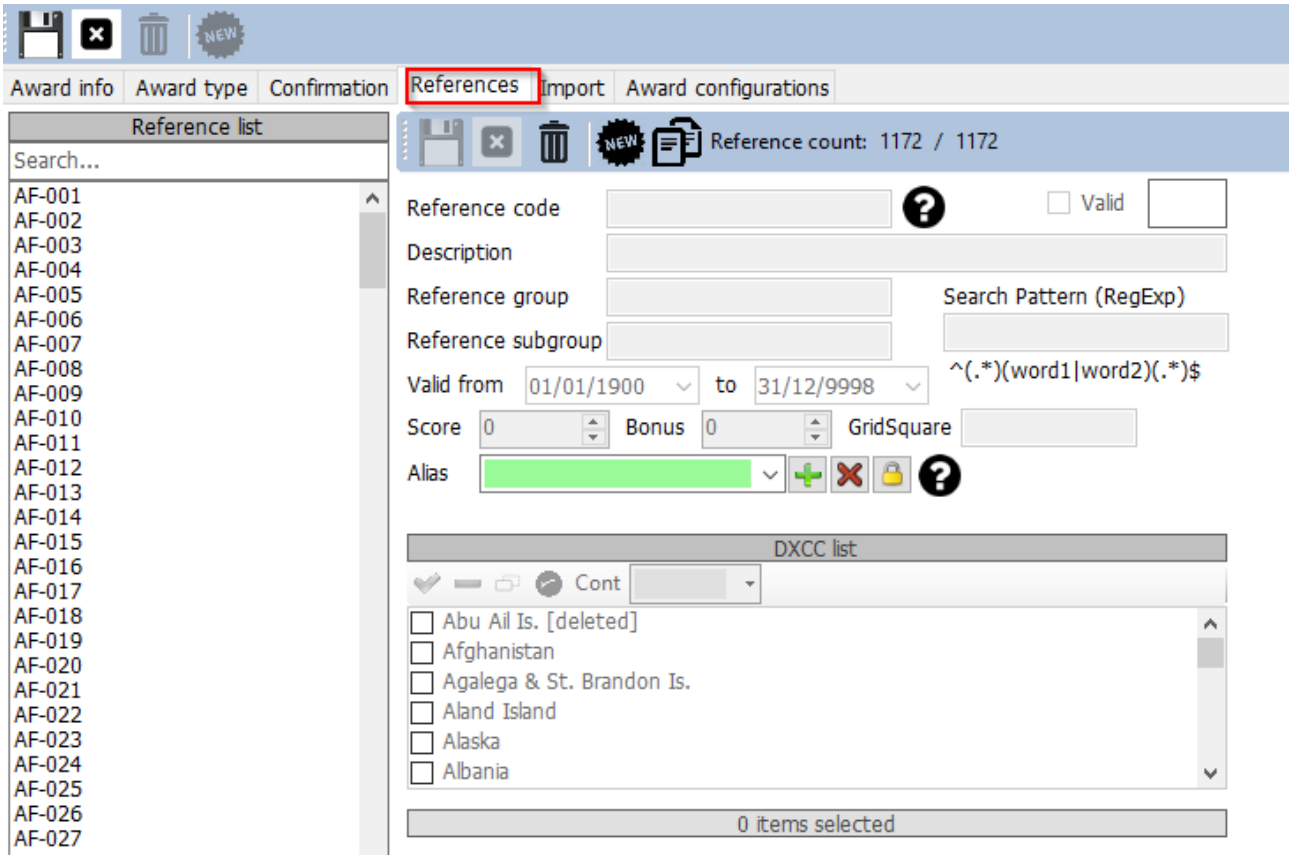
```
"Ref. No.","Callsign","UTC","Count for","Method","Status"
"AF-004","EA8ADL","2012-05-01 16:17:00","HF bands","DXCC matches one IOTA","Active"
"AF-005","D4A","2012-03-24 14:41:00","HF bands","Accepted Operation","Active"
"AF-014","CQ3L","2012-03-24 14:17:00","HF bands","Accepted Operation","Active"
"AF-016","TO19A","2019-04-29 09:26:00","HF bands","DXCC matches one IOTA","Active"
"AF-028","7O6T","2012-05-14 16:43:00","HF bands","Accepted Operation","Active"
```

In order to have this QSO confirmed in Log4OM users should import that file, but users also need to inform Log4OM that the string "HF bands" means CONFIRMED. To do that, users must add a GRANT CODE in the confirmation section, to reflect that:

This is how an IOTA award is configured in Log4OM



AWARD REFERENCES



This is the core of the award. The references.

Reference group and subgroup are optional but group is strongly suggested to provide more filtering options to the award itself.

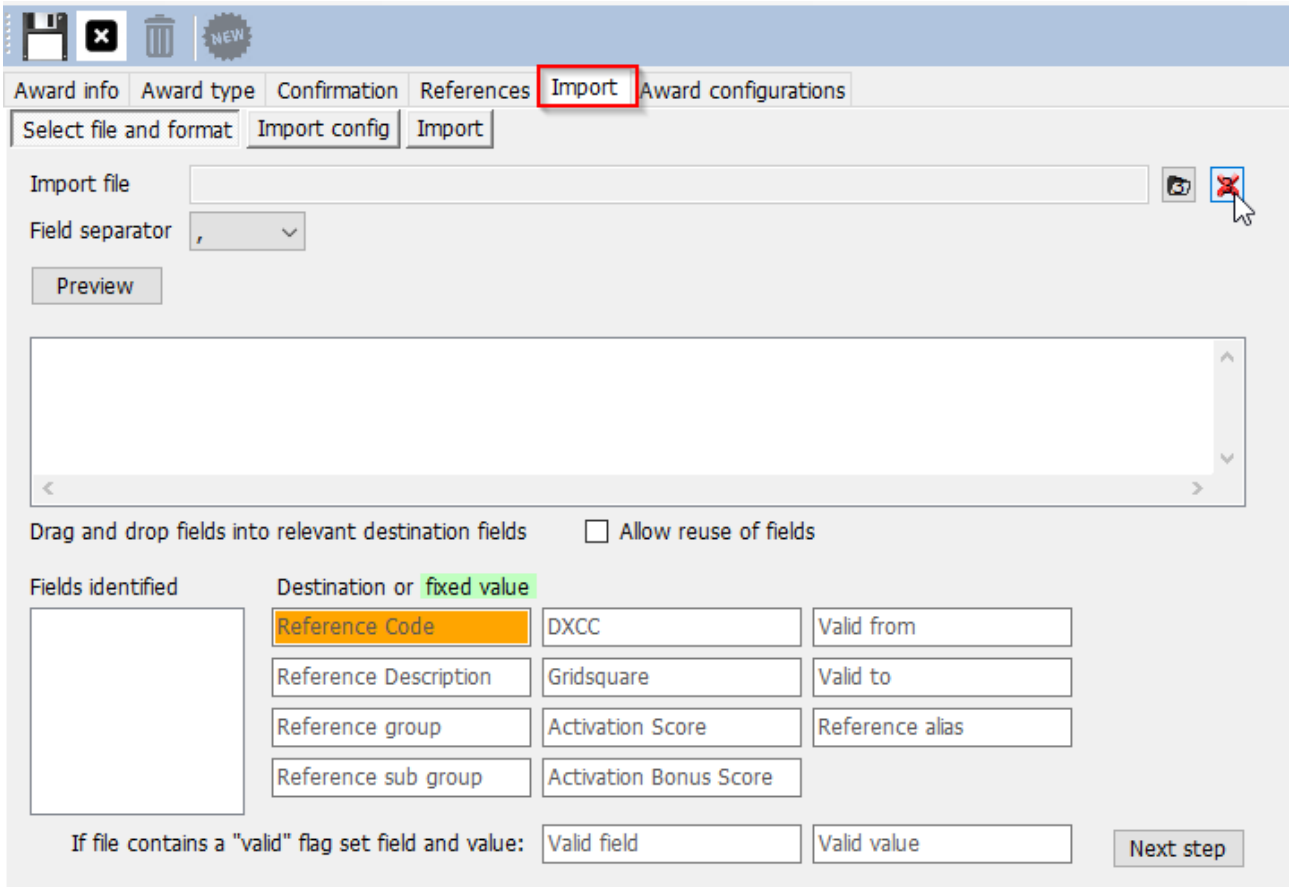
Reference code must contain a call sign for CALLSIGN type awards.

All fields are self explanatory.

Alias field is used to account for award reference renaming or when a reference has multiple codes or has a worldwide award code and regional codes referring to the same place.

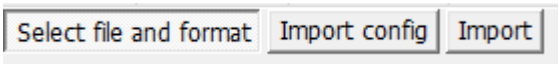
As example, if a castle has reference IT-123 in the WORLD CASTLES AWARD and the ITALIAN CASTLES AWARD has reference ITA-999 for the same reference, users may add IT-123 as alias for ITA-999. In this case, adding IT-123 (or reading that from cluster) will automatically give users reference for IT-123 in the world castles award and will find ITA-999 reference in the Italian castles award.

Import award references



The very powerful Log4OM automatic import function for references reduces the user workload considerably..

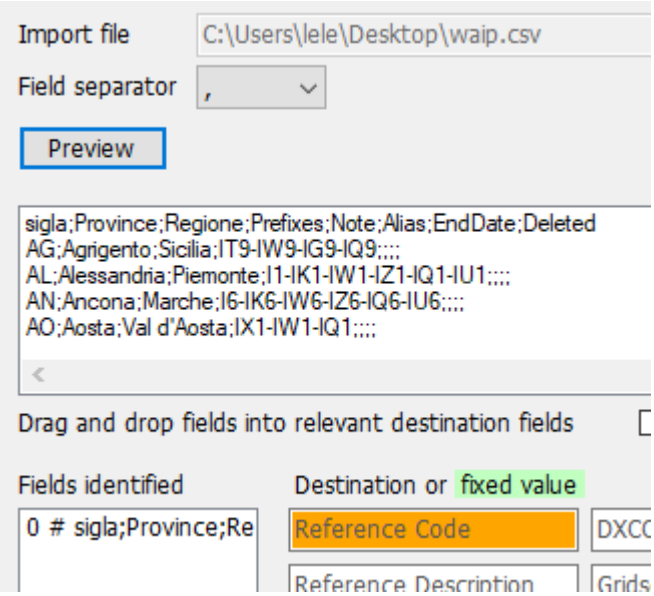
The 'Import' is in 3 sections.



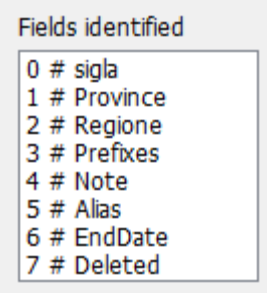
Select file and format

Field separator: the text file field separator.

Preview: Will show a preview of the file to help users find the correct separator character. In this case, the comma is bad, because Log4OM can only identify one field, the semi colon (;) should have been selected.



The right separator is ";", and after a preview, this is the list of fields:

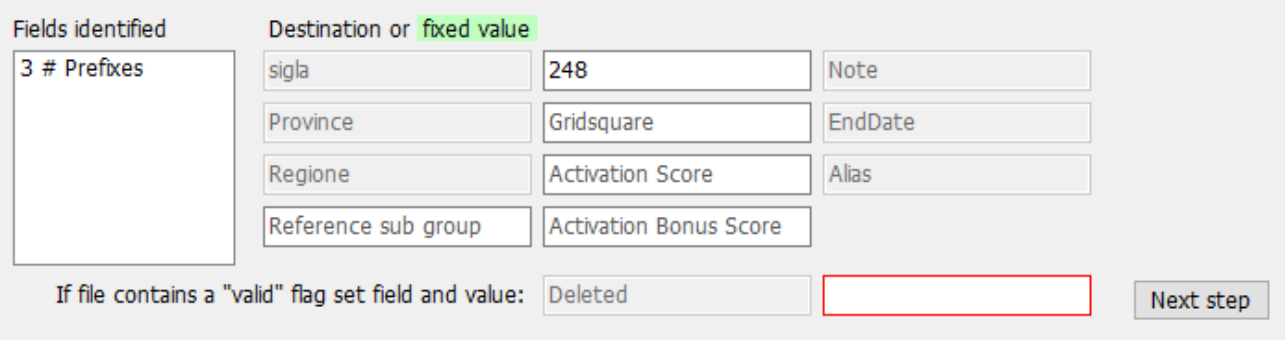


For Worked All Italian Provinces Log4OM selects this configuration. Log4OM knows that the NOTE fields contain the START date of the reference, while the END DATE, if any, contains the END DATE.

Some provinces were renamed through the years, Alias will resolve that field.

Deleted field contains a note when a province is deleted, Log4OM will assume the value set as the VALID value, so leaving it blank will allow Log4OM to have all provinces marked as valid, and DELETED (this is different from blank) as INVALID.

If a CSV file doesn't have a header users will see on the FIELDS IDENTIFIED a list of the values of the first row. This will not create any kind of issue on further activities. Simply drag and drop the right field in the right place.



Note that DXCC field has been typed manually (and not dragged from the fields) as its fixed.

Log4OM manually updated the province of Sardinia after import, because the DXCC field was not available in the file. Users can edit the file in excel and save some time and complexity.

Import Config

Here users can inform Log4OM if the reference format expected is a number (e.g. DXCC field) or a string.

Users can also provide the date format used in the CSV file, by selecting the correct format.

A reference may contains multiple DXCC codes, as example for a park that is shared between multiple countries. In this case, users can set the separator of the multiple DXCC fields to allow Log4OM to identify them correctly.

For awards that report DXCC fields as a PREFIX LIST, users must mark the “DXCC is char PREFIX” Log4OM will try retrieving the right DXCC code from the prefix.

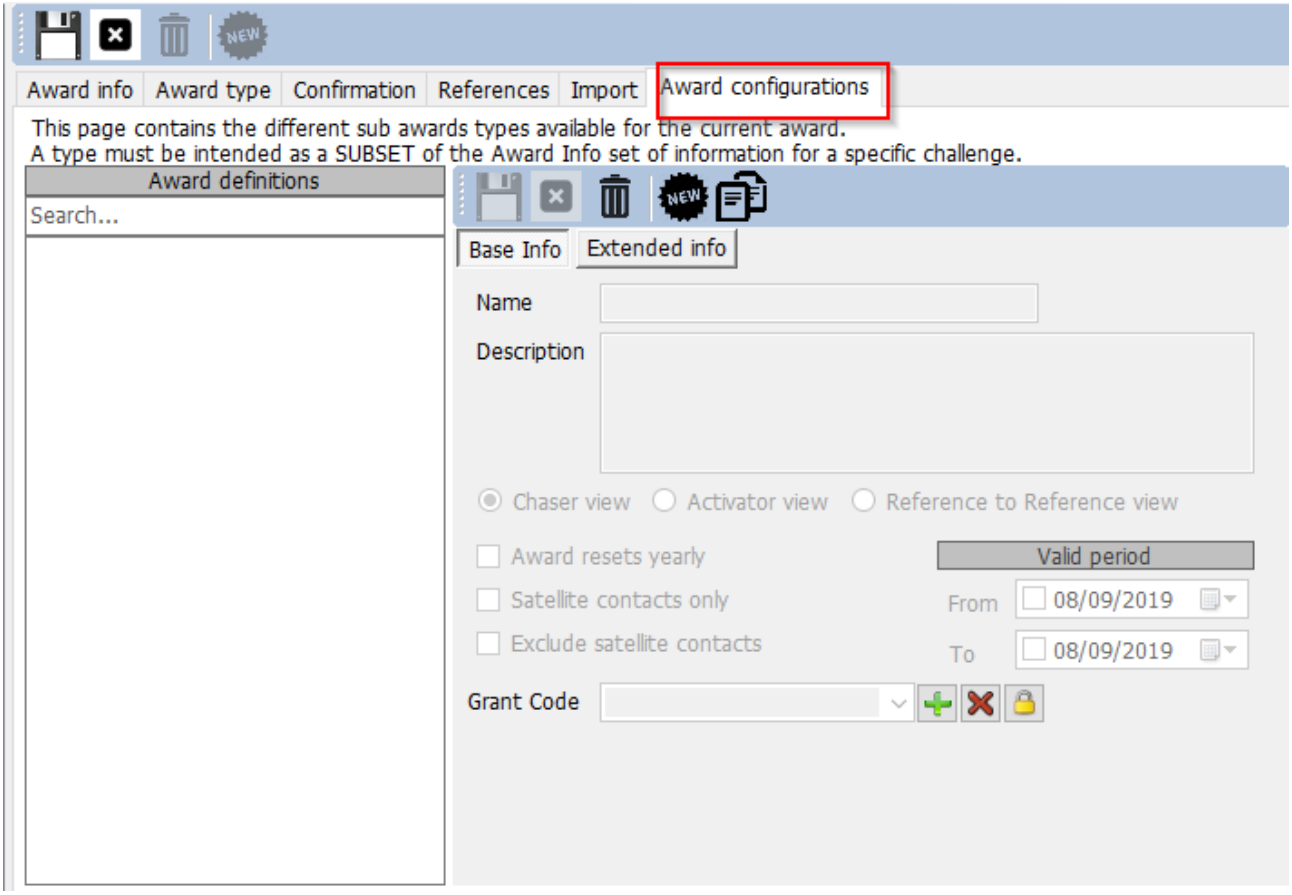
Merge: Actual reference list will be merged with the imported one.

Skip first row: If the CSV field contains header, users must set this flag.

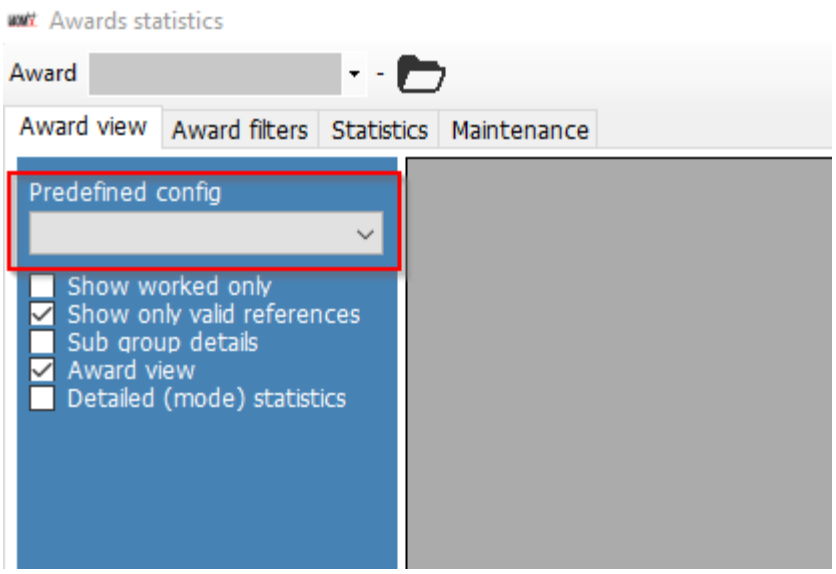
Import: This will import the file…

AWARD CONFIGURATIONS

Award view may be configured to reflect multiple situations.

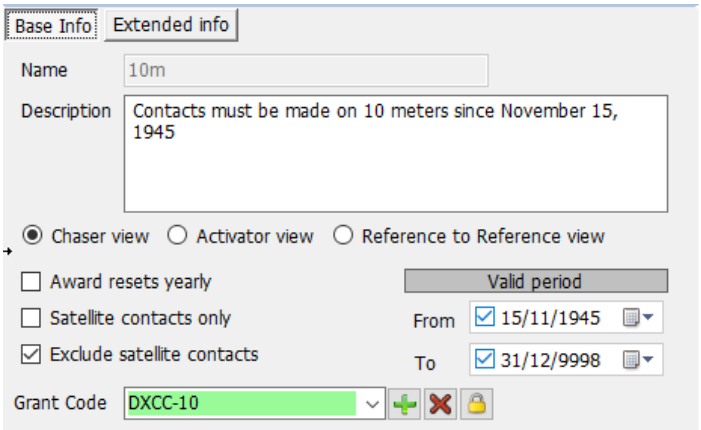


As example, DXCC has a lot of sub-awards that may be useful to view in depth.
With award configurations users can create filters that will be shown in the award statistics screen in the “predefined config”.



DXCC is a clear example of this:

In detail, let's examine 10M configuration



Chaser view: Show the typical "chaser" view, the QSO shown from user's point of view as a chaser.

Activator view: The award will be presented from the point of view of an activator. Only QSO where users have a STATION REFERENCE as activator of the same award will be shown.

Reference to reference view: Only QSO made FROM a reference in the award with operators in a valid reference of the same award are shown. This is the SOTA "summit to summit" view.

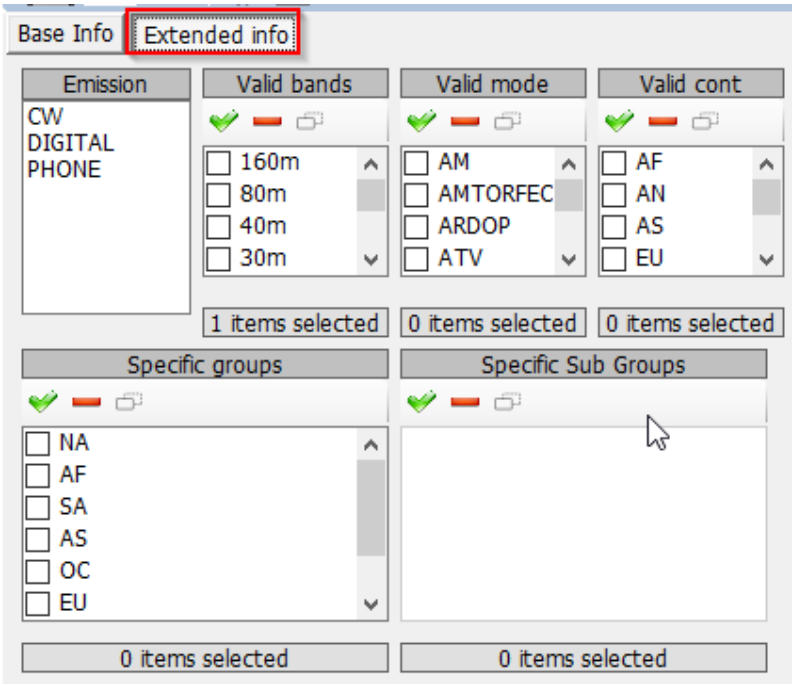
Award reset yearly: Statistics are shown and filtered in the award statistics for the selected year. This option will enable the "year filter".

Satellite contacts only: Only satellite contacts are considered

Exclude satellite contacts: Satellite contacts will be excluded from the view.

Grant code: for the DXCC award, this is the GRANT CODE that is retrieved from LOTW download. If Log4OM finds DXCC-10 in the list of granted codes received from LOTW it mark the contact VALIDATED for the current SPECIFIC award view.

A specific configuration can be personalized in depth to show only a subset of references using the extended info:



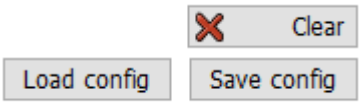
External confirmation import

For all awards that have “external management”, like IOTA, Log4OM is able to import a CSV text file containing info about the reference status.

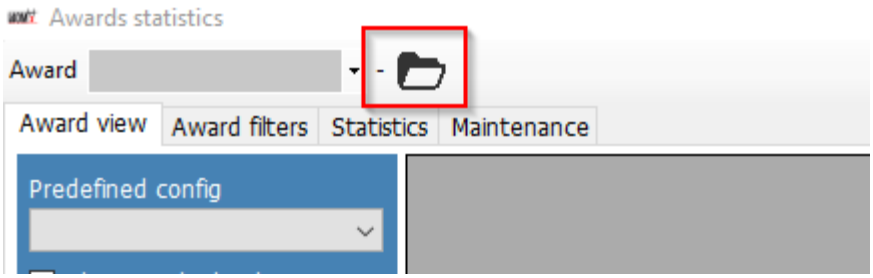
The interface is complex and powerful, but Log4OM provides predefined schema for known awards. Log4OM made the confirmation import so “complex” because Log4OM wanted to provide users with the most powerful and complete tool to manage their log and their awards.

For the “casual user” Log4OM provides, for standard awards, a predefined set of configurations, based on the award standard files provided by the award managers.

To load predefined config, simply press the Load Config button. Save Config will export the config in the Log4OM awards database.



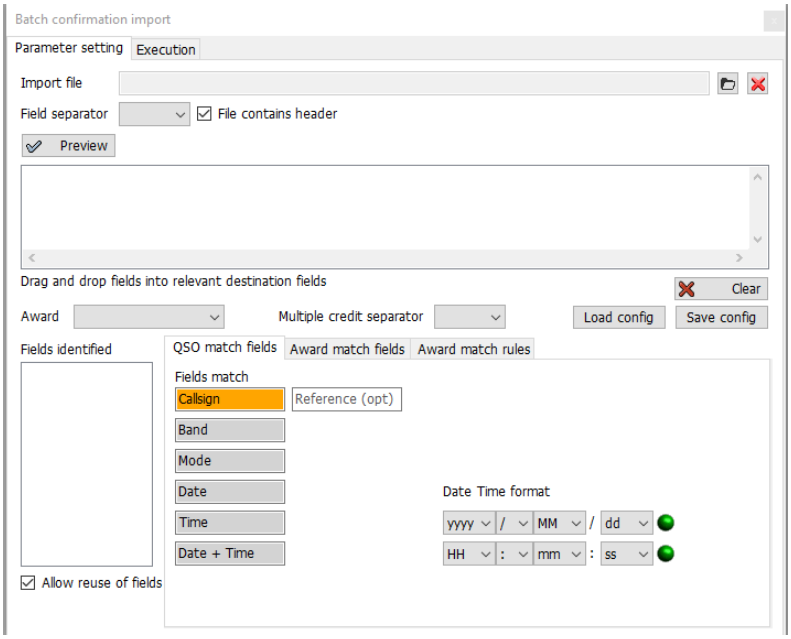
The import function is available through the award statistics screen, in the top bar:



The import screen is divided into sub sections for clarity.

Log4OM will import a IOTA status file, as example. Here a section of an IOTA file:

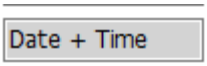
```
"Ref. No.","Callsign","UTC","Count for","Method","Status"
"AF-004","EA8ADL","2012-05-01 16:17:00","HF bands","DXCC matches one IOTA","Active"
"AF-005","D4A","2012-03-24 14:41:00","HF bands","Accepted Operation","Active"
"AF-014","CQ3L","2012-03-24 14:17:00","HF bands","Accepted Operation","Active"
"AF-016","TO19A","2019-04-29 09:26:00","HF bands","DXCC matches one IOTA","Active"
"AF-012","FT4JA","2016-04-02 15:34:43","HF bands","Accepted Operation","Accepted"
"AF-002","FT5ZM","2014-01-29 11:21:00","HF bands","QSL","Accepted"
"AF-003","ZD8Z","0000-00-00 00:00:00","HF bands","QSL","Accepted"
"AF-004","EA8AJO","0000-00-00 00:00:00","HF bands","QSL","Accepted"
```



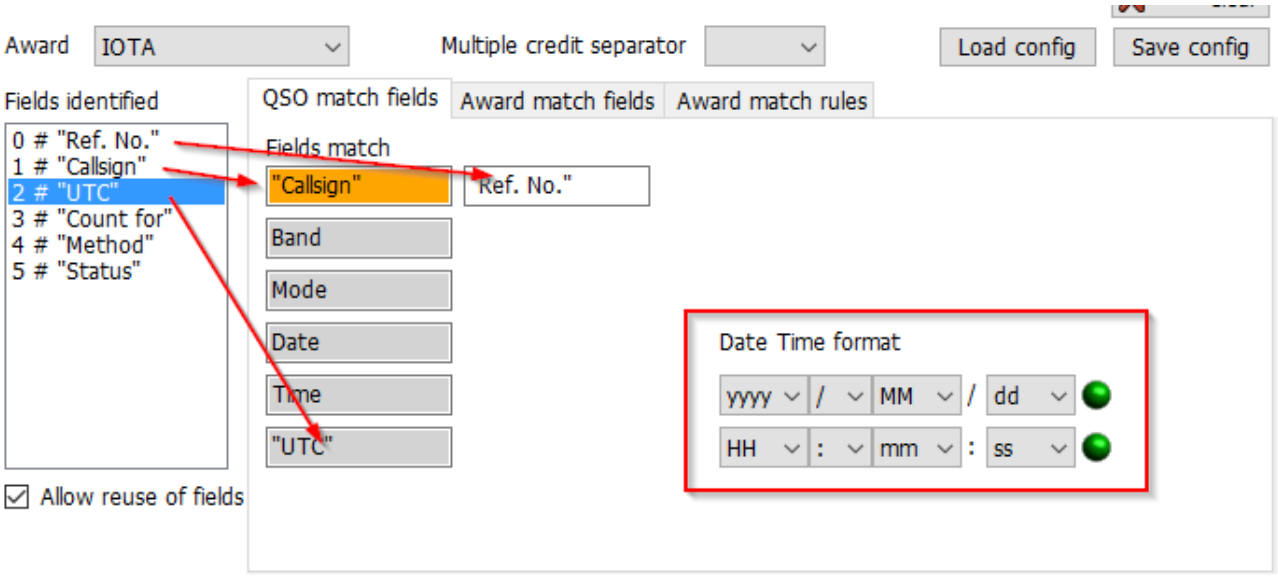
Qso Match fields:

This section allow users to identify data in the import that can help Log4OM identify the QSO. Some of those fields may be missing, in this case Log4OM will make some analysis of the data, trying to find the right QSO (or multiple QSO in some cases)

Drag and drop fields to the correct places. If DATE is provided, drag the date field in the Date position. If TIME is provided do the same. If format is DATE + TIME (as in our case) the right field is this:

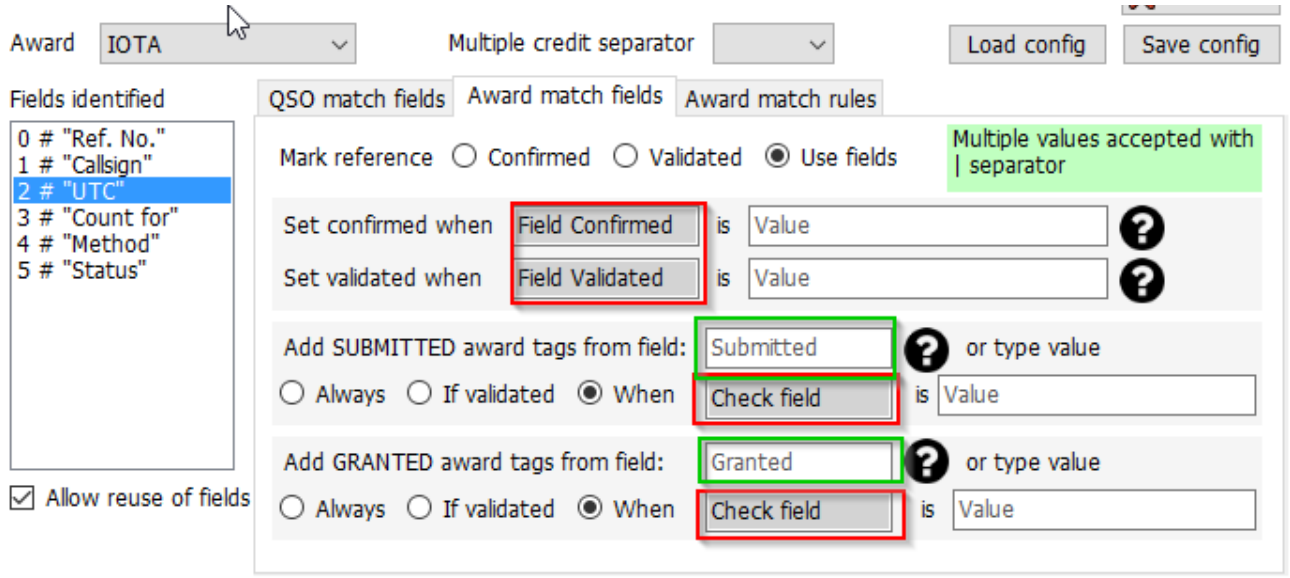


In this situation Log4OM only has CALLSIGN, REFERENCE and UTC date+time.



Remember to check the date-time format used in the file.

Award match fields



Red fields Will accept drag/drop from file columns

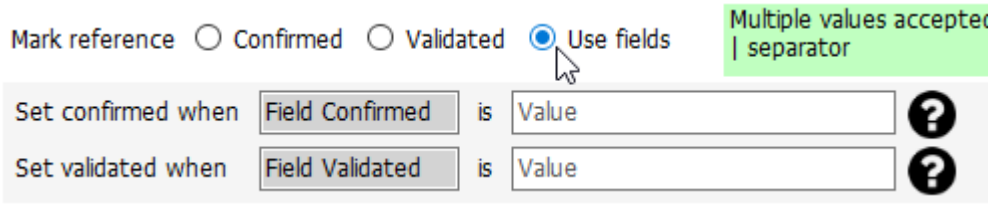
Green fields Will accept drag/drop and direct typing

Mark reference:

CONFIRMED: when a QSO is found in the file, the Reference is automatically marked CONFIRMED

VALIDATED: when a QSO is found in the file, the Reference is automatically marked VALIDATED

USE FIELDS: If the file contains both CONFIRMED and VALIDATED information. Further filters are required.

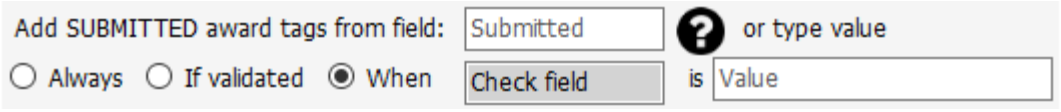


Users can analyze confirmed and validated status, from QSO fields. When the indicated string is found, the QSO is considered CONFIRMED (or VALIDATED) **and SUBMITTED/GRANTED values are IGNORED**

Submitted status

After validation, some awards require another step, that is the submission of the reference for the final grant of the award. Log4OM is able to manage this phase working with external files, other than with single references.

When a QSO is submitted users can mark it with a TAG. As an example, users may want to mark the QSO with IOTA_MIXED tag, or users may have a file that contains the list of submitted QSO for the IOTA MIXED award.



In this case users can use a field from the file, if any, or directly type the tag value in the field.

Users can select:
ALWAYS: All QSO are marked SUBMITTED. This is typically the case of a file that reports SUBMITTED QSO.

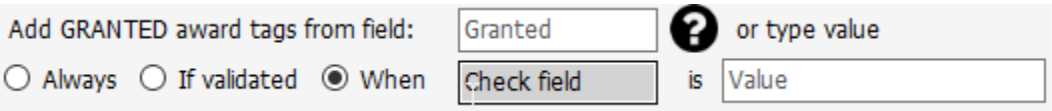
IF VALIDATED: Add the tag if the reference is validated

WHEN: Add the tag if the indicated field has the set value

If nothing is indicated in the **Submitted** field nothing is done

Granted status

After submission, users may import a GRANTED file from the award. This will finally mark the QSO as GRANTED for the selected award / award code.



In this case users can use a field from the file, if any, or directly type the tag value in the field.

Users can select:
ALWAYS: All QSO are marked GRANTED. This is typically the case of a file that reports GRANTED QSO.

IF VALIDATED: Add the tag if the reference is validated

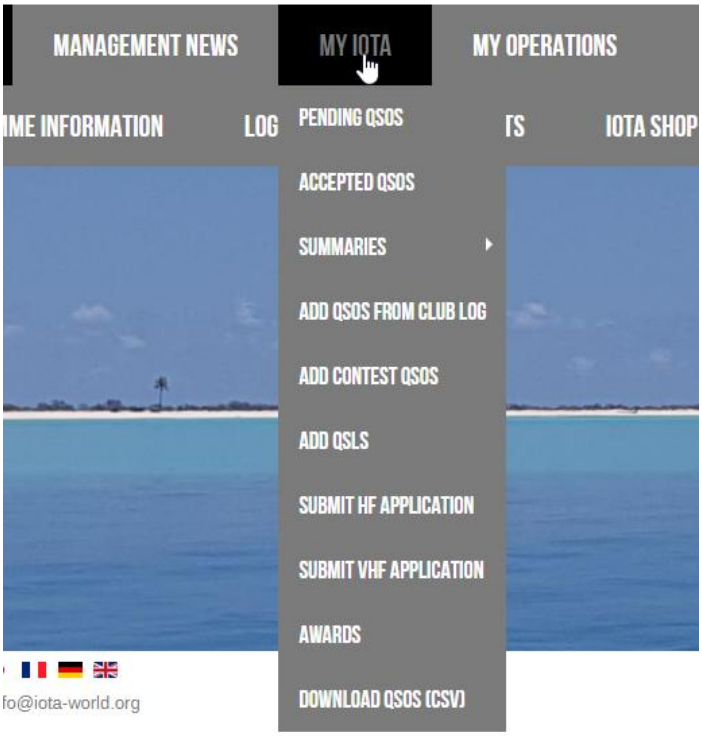
WHEN: Add the tag if the indicated field has the set value.

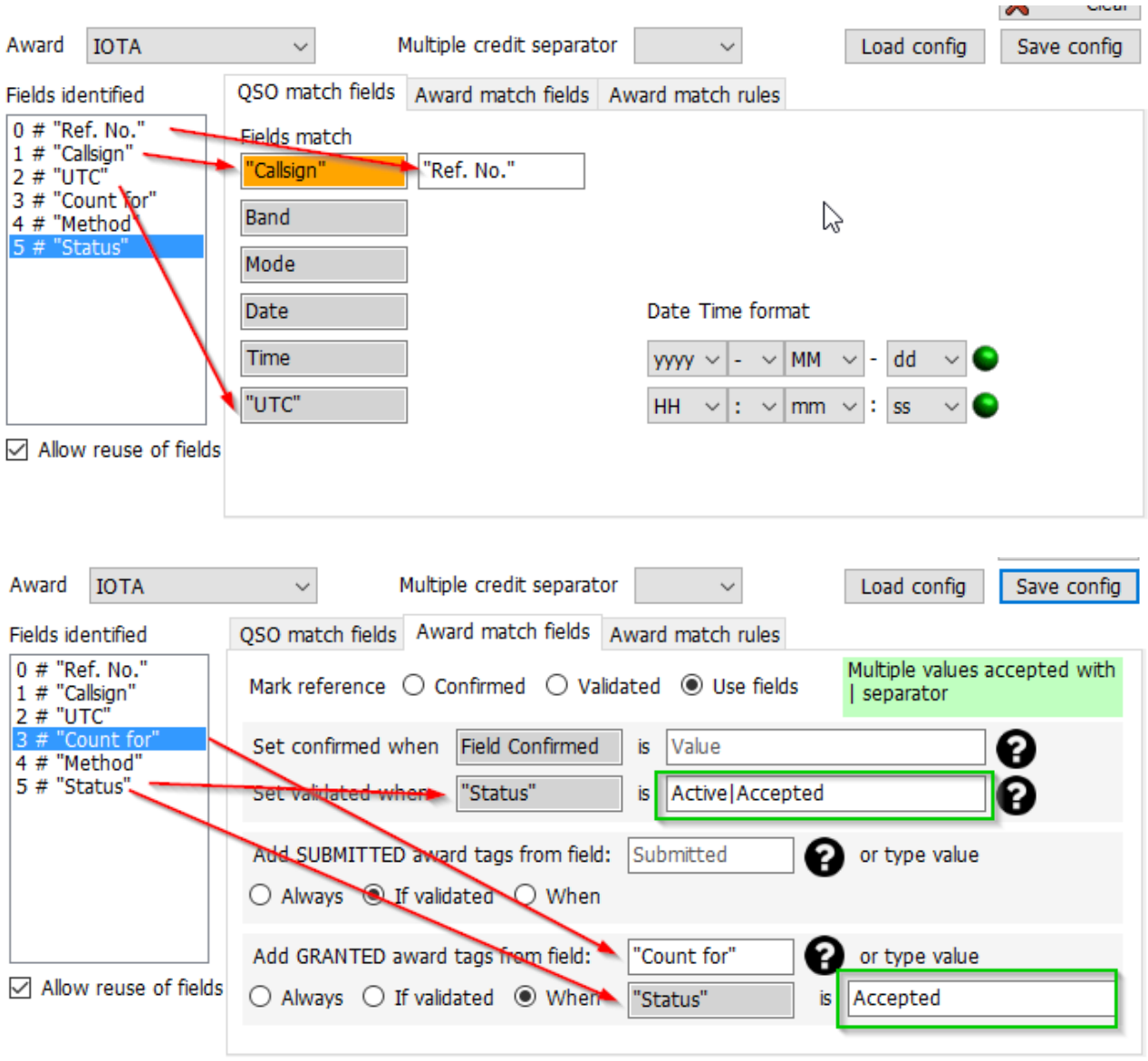
If nothing is indicated in the **Granted** field, nothing is done

IOTA settings

Users can download an IOTA status file from https://www.iota-world.org/

And selecting DOWNLOAD QSOS (CSV) after login.

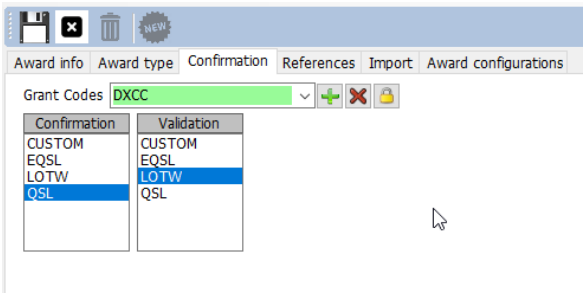




Award Submitted and Granted display

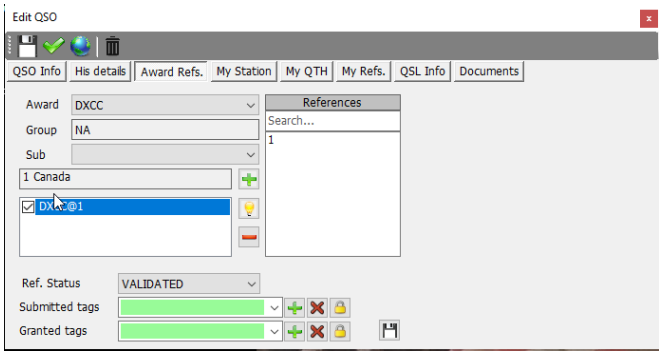
Award definitions may require an optional additional definition of a GRANT CODE.

This code will be used to manage display of SUBMISSION and GRANTED status **at award level**.

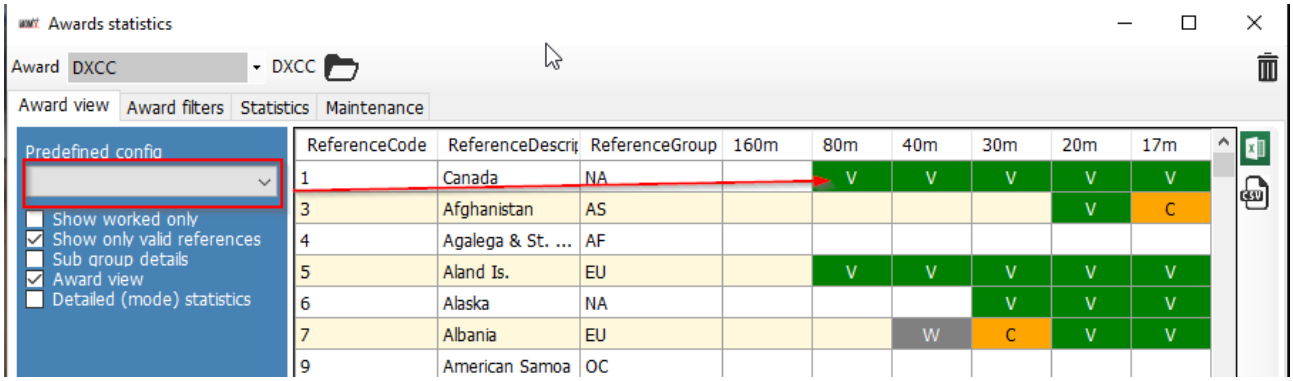


How this field works:

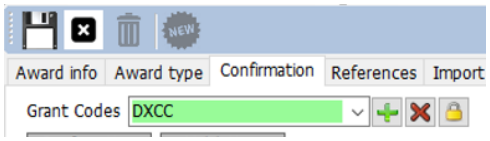
This was a QSO with CANADA on 80 meters

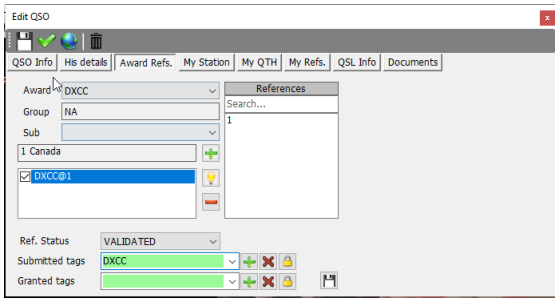


It has been VALIDATED but has NO SUBMITTED or GRANTED tags attached to it in the PREDEFINED config, this qso marks the 80M DXCC , because there is no 'Predefined Config' as VALIDATED.



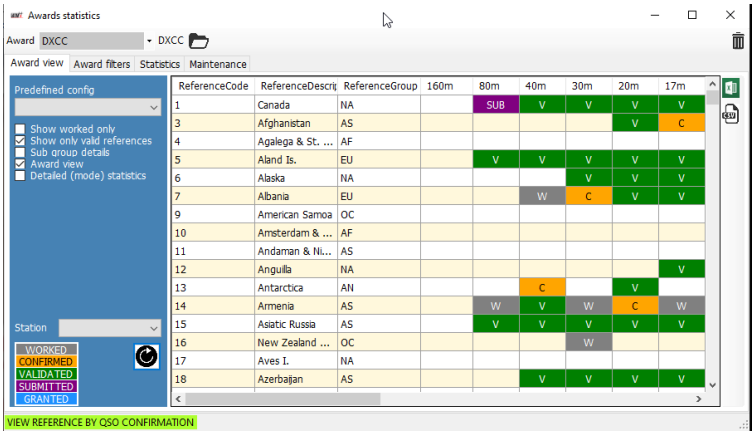
Mark the QSO... as submitted by adding a “DXCC” tag to the SUBMITTED tags. DXCC tag is the one set in the award definition here, as shown some rows above:



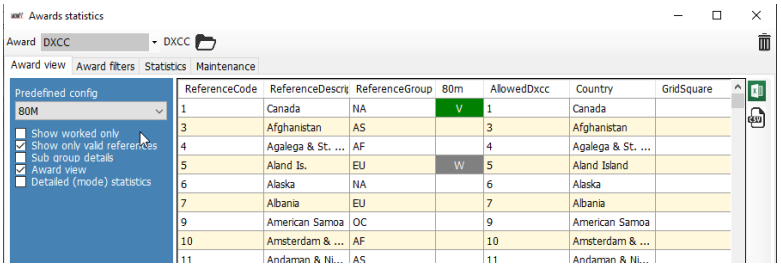


Log4OM has now set DXCC as submitted tags. Press the SAVE button  to apply the changes (the small floppy icon) and the QSO is SAVED using the top bar buttons  to permanently save the changes in the database.

Refreshing the statistics causes the Award statistics to change to SUBMITTED in CANADA 80M, because the AWARD default submit/grant code is matching the DXCC value in the QSO tags:

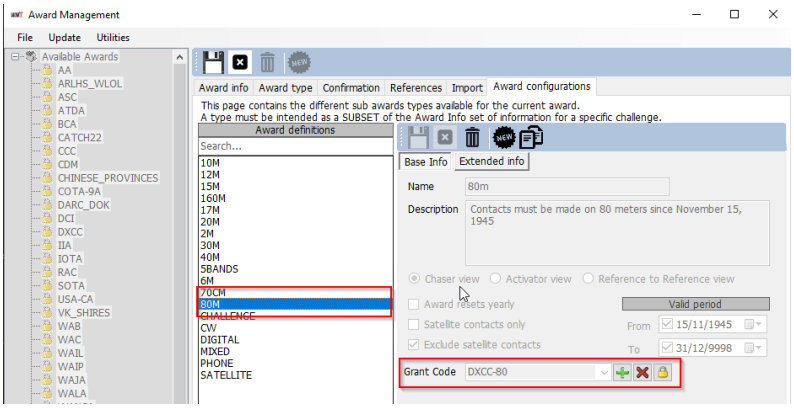


When selecting the 80 meters view using the specific sub-award view (available from the PREDEFINED CONFIG drop down)



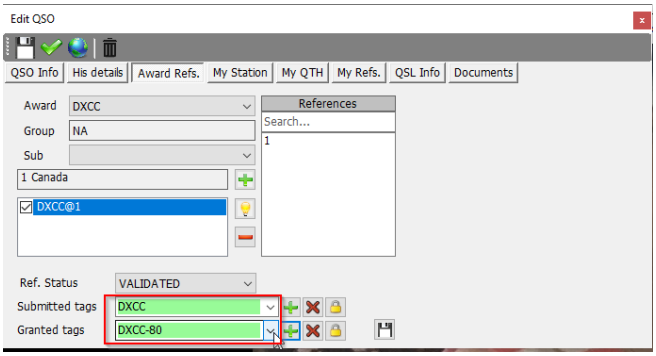
The award status is still showing VERIFIED, because QSO is verified and no suitable tags are found to mark this QSO submitted or granted for the 80meters DXCC sub award.

The 80M specific 'tags' (that Log4OM, for DXCC, retrieves automatically from LOTW import functions) are defined by the ARRL itself as ADIF Field. Those “tags” are selected in Log4OM Award Configuration screen:



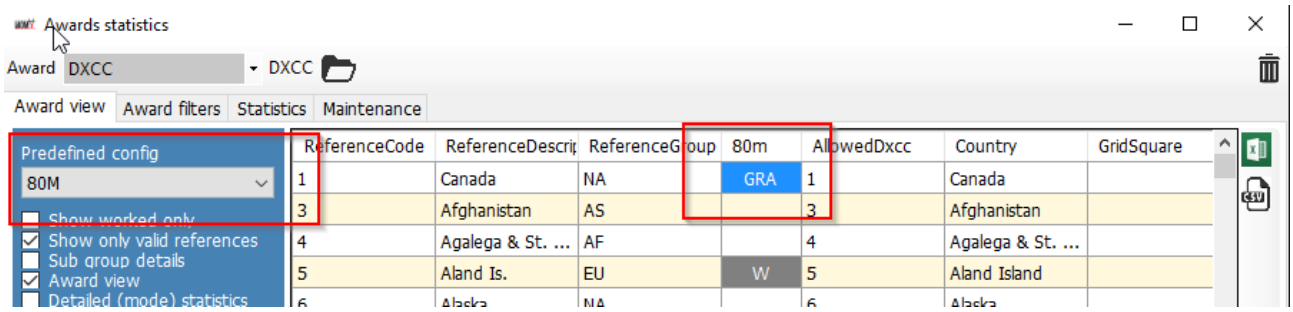
For DXCC, the ADIF code that represent a SUBMITTED/GRANTED status for 80M award is DXCC-80. Incidentally DXCC program will not support “SUBMITTED” feedback, but only GRANTED, through their ADIF download functions, so Log4OM will never show SUBMITTED status for DXCC. This feature is available for any other kind of award.

To simulate receipt of a DXCC-80 GRANTED status from the latest LOTW downloaded ADIF.



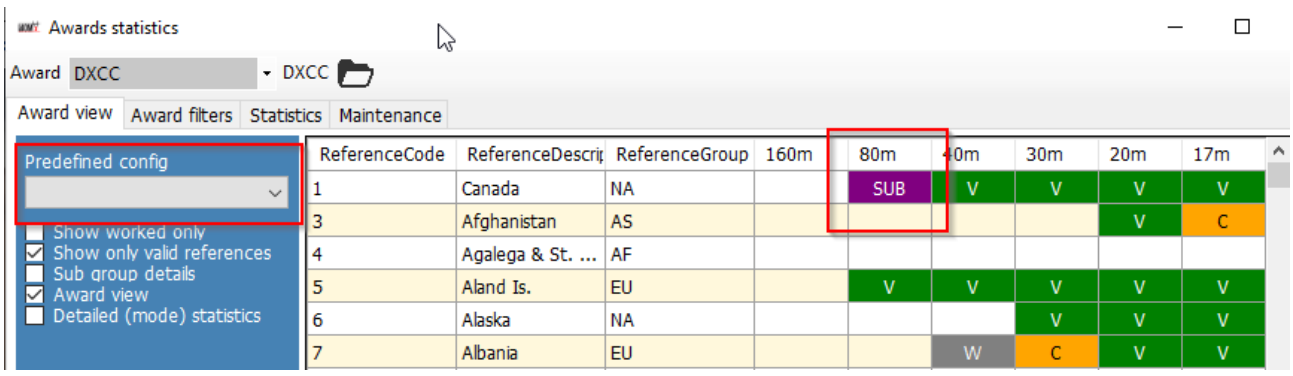
The Log4OM reference will automatically receive the DXCC-80 tags from the ADIF download, but the user can manually force it to simulate the situation, or to manually mark the granted status for an award that doesn't support or provide update information in electronic format.

After having pressed the SAVE (Floppy disc icon) button the reference is now stored in the QSO data, save the QSO itself to permanently save the information in the database and refresh the award statistics, selecting 80M award in the "predefined config" section.



80M now displays GRANTED, because 80M is searching for DXCC-80 tag in the submitted or granted fields and changed the display accordingly.

Predefined "award wide" situation is still showing the GRANTED status, because no changes have been made on that side.

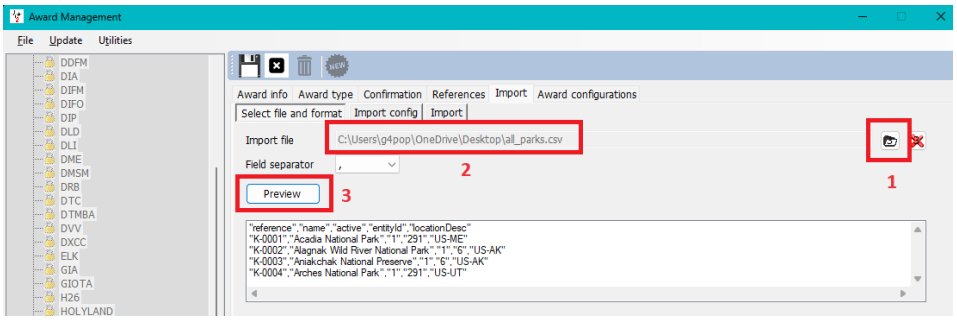


In the "real world" the DXCC-80 is always accompanied by "DXCC" tag in the ADIF file from LoTW, so those displays may be marked received, submitted or granted, but the main view will show the GRANTED status from a mix of sub awards, this can create confusion if the user is not aware of what is happening in the background.

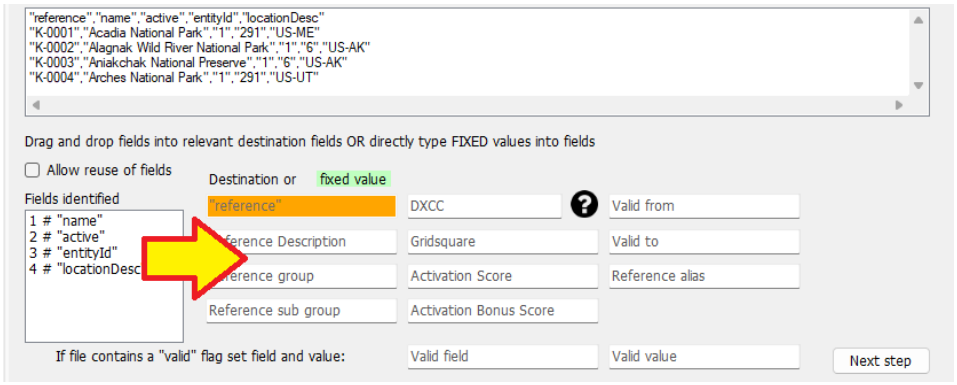
For the DXCC award, Log4OM automatically takes care of all of these aspects, for other awards the user can manually mark tags in the references with custom codes, or use the IMPORT feature to load files provided by the award program managers.

POTA – Award Update

1. Download the latest csv file from the POTA site https://pota.app/all_parks.csv and save it to a known location.
2. In Utilities/Award manager double left click on the POTA award
3. Open the 'Import' tab and view 'Select file and format.'
4. Select the file that was downloaded from POTA in the 'Import file' field by clicking the folder icon on the right.
5. Click the preview button.



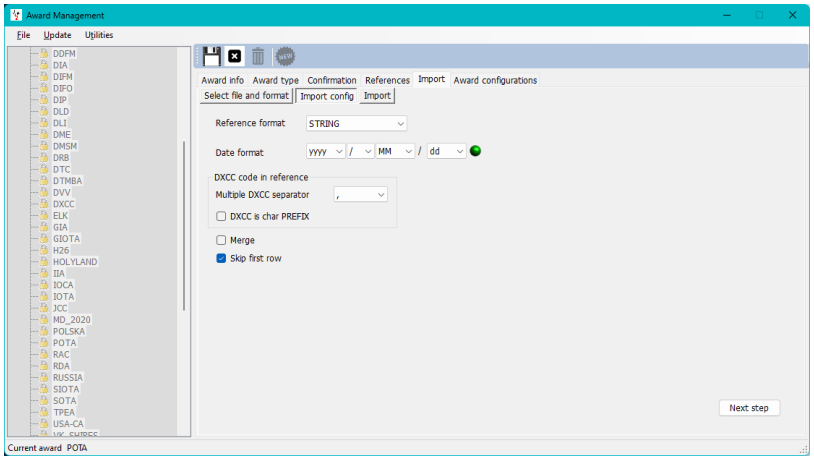
6. Drag and drop the fields from the 'Fields identified' window to the relevant 'Destination' fields
   E.G.
   Reference to Reference code
   Name to Refence description
   Entityid to DXCC
   LocalDesc to Reference group



7. Click the 'Next step' button

8. If merging an update to the existing data check the merge box**, otherwise leave it unchecked**.

9. Check the box ‘Skip first row’ otherwise the import will include the header fields which are not required.



10. Click ‘Next step’
11. In the resulting ‘Import’ tab click the HD icon marked with a green plus sign, wait for the import to finish and click the ‘Operation completed’ OK button
12. **CLICK THE ‘SAVE AWARD’ FLOPPY DISK ICON AT THE TOP OF THE AWARD WINDOW**

WWFF – Award Update

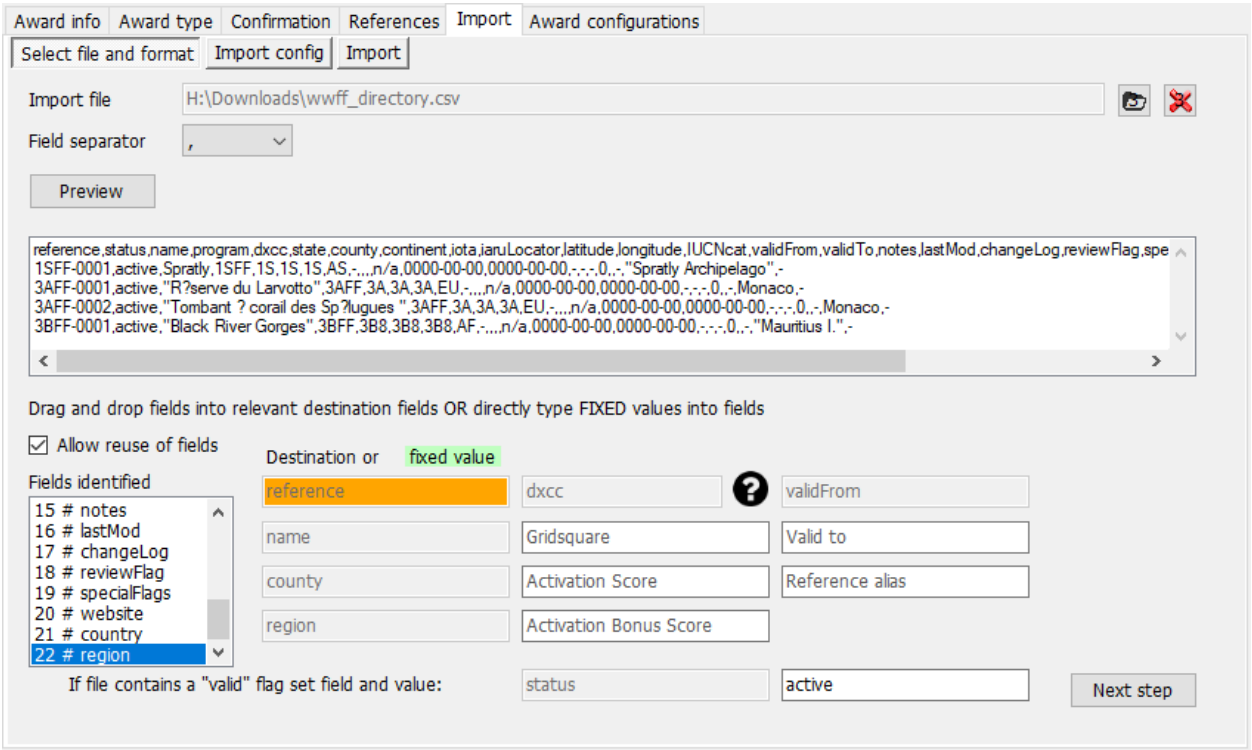
Select file and format

Import file:	..\wwff_directory.csv	point to the downloaded CSV file
	Link:	http://wwff.co/wwff-data/wwff_directory.csv
	Make sure the file is saved as an UTF-8 file!!!	

Field separator: ,

Allow reuse of fields: checked

Field settings:	Reference Code:	reference
	DXCC:	dxcc
	Valid from:	validFrom
	Reference Description:	name
	Gridsquare:	-
	Valid to:	-
	Reference group:	country
	Activation Score:	-
	Reference alias:	-
	Reference sub group:	region
	Activation Bonus Score:	-
Valid settings:	Valid field:	status
	Valid value:	active


Award info
Award type
Confirmation
References
Import
Award configurations
Select file and format
Import config
Import
Import file
H:\Downloads\wwff_directory.csv
Field separator
,
Preview
reference,status,name,program,dxcc,state,county,continent,jota,iaruLocator,latitude,longitude,IUCNcat,validFrom,validTo,notes,lastMod,changeLog,reviewFlag,spe
1SFF-0001,active,Spratly,1SFF,1S,1S,1S,AS,-,,,,n/a,0000-00-00,0000-00-00,-,-,-,0,,-,"Spratly Archipelago",-
3AFF-0001,active,"R?serve du Larvotto",3AFF,3A,3A,3A,EU,-,,,,n/a,0000-00-00,0000-00-00,-,-,-,0,,-,Monaco,-
3AFF-0002,active,"Tombant ? corail des Sp?lugues ",3AFF,3A,3A,3A,EU,-,,,,n/a,0000-00-00,0000-00-00,-,-,-,0,,-,Monaco,-
3BFF-0001,active,"Black River Gorges",3BFF,3B8,3B8,3B8,AF,-,,,,n/a,0000-00-00,0000-00-00,-,-,-,0,,-,"Mauritius I.",-
Drag and drop fields into relevant destination fields OR directly type FIXED values into fields
Allow reuse of fields
Destination or
fixed value
Fields identified
15 # notes
16 # lastMod
17 # changeLog
18 # reviewFlag
19 # specialFlags
20 # website
21 # country
22 # region
reference
dxcc
validFrom
name
Gridsquare
Valid to
county
Activation Score
Reference alias
region
Activation Bonus Score
If file contains a "valid" flag set field and value:
status
active
Next step

➔ NEXT STEP

Import config:

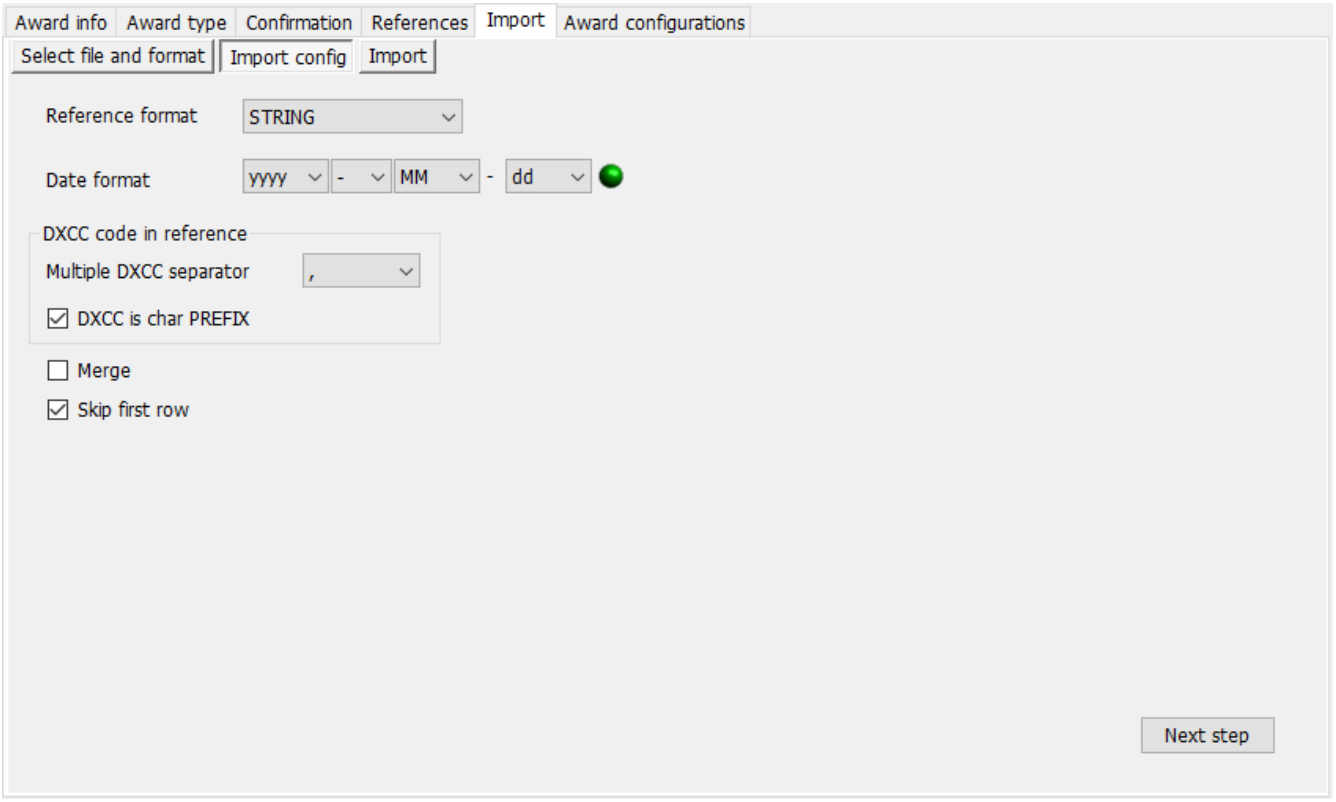
Date Format: yyyy-MM-dd

Multiple DXCC separator: ,

DXCC is char PREFIX: checked

Merge: -

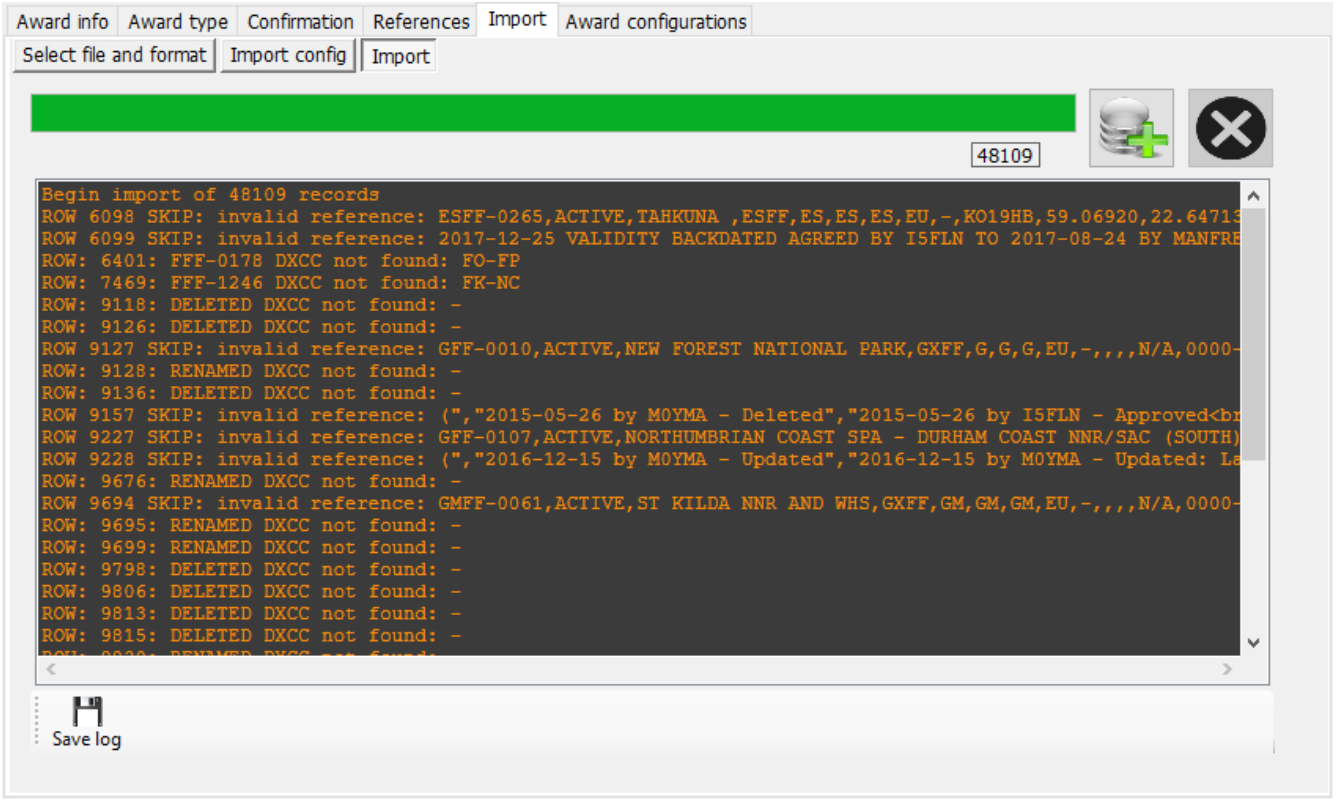
Skip first row: checked



➔ NEXT STEP

Import

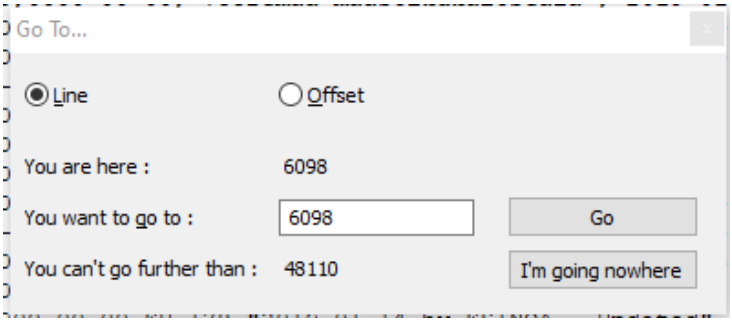
When you click on the import button the import will start. When done, more than 48000 records have been imported, and you always will see some errors. Most of these errors are repetitive because the Excel CSV file has some issues.



Usually you will face “invalid reference” and “DELETED/RENAMED DXCC not found”. Usually these are related, the problem is an invalid row in the CSV file (usually a wrong CR/LF). This must be fixed in the CSV file!

The log file will show you the row numbers where a problem occurred. Use Notepad++ or a similar editor to edit the wwff_directory.csv file. In Notepad++ you can use CTRL-G to jump to a row.

We have the first issue in row 6098, so let us go there:



We can see that there is a wrong CR/LF

```
6095  ESFF-0262,active,Kiipsaare,ESFF,ES,ES,ES,EU,-,KO08MA,58.49235,21.84523,"Cat Ib",2017-08-08,0000-00-00,"Vilsandi RP, Kiipsaare skv.","201
6096  ESFF-0263,active,Vormsi,ESFF,ES,ES,ES,EU,-,KO19NA,59.02421,23.12324,Natura2000,2017-08-08,0000-00-00,EU-034,"2019-01-14 by ES1NOA - Upda
6097  ESFF-0264,active,"Osmussaare    ",ESFF,ES,ES,ES,EU,-,KO19QH,59.01800,23.02100,Natura2000,2017-08-08,0000-00-00,EU-034,"2019-01-14 by ES1N
6098  ESFF-0265,active,"Tahkuna ",ESFF,ES,ES,ES,EU,-,KO19HB,59.06920,22.64713,,2017-08-24,0000-00-00,-,"2019-01-14 by ES1NOA - Updated","2019-
6099  2017-12-25 validity backdated agreed by I5FLN to 2017-08-24 by Manfred DF6EX",0,,https://www.protectedplanet.net/tahkuna-site-of-communi
6100  ESFF-0266,deleted,"Kaavi Saaremaa ",ESFF,ES,ES,ES,EU,-,-,57.58900,2.21100,"Cat IV",2017-08-24,2019-02-07,"Nature Reserve","2019-02-07 by
6101  ESFF-0267,deleted,"Kopu Hiiumaa ",ESFF,ES,ES,ES,EU,-,-,58.54900,2.21100,"Cat IV",2017-08-24,2019-02-07,"Conservation Covernant","2019-02
```

Row 6099 belongs to 6098, that is the reason why we get the error messages for row 6098/6099.

Go the first column in row 6099, hit backspace and enter a blank. The row should look like:

```
on, Locator, Region<br>2017-08-08 by i5fln - Approved<br>2017-08-07 by i5fln - Created",0,,https://protectedplanet.n
ry, Locator, Region<br>2017-08-08 by i5fln - Approved<br>2017-08-07 by i5fln - Created",0,,https://protectedplanet.n
9-18 by i5fln - Approved<br>2017-09-18 by i5fln - Created 2017-12-25 validity backdated agreed by I5FLN to 2017-08-2
by i5fln - Approved<br>2017-09-18 by i5fln - Created 2017-12-25 validity backdated agreed by I5FLN to 2017-08-24 by
-09-18 by i5fln - Approved<br>2017-09-18 by i5fln - Created 2017-12-25 validity backdated agreed by I5FLN to 2017-08-
```

We have similar issues in row 9118, 9126, 9127, 9128…

We can see again that there are issues with wrong CR/LF in the CSV file:

```
9114  GDFF-0023,active,Scarlett,GxFF,GD,GD,GD,EU,-,,,,n/a,0000-00-00,0000-00-00,-,-,-,0,,-,"Isle Of Man",-
9115  GFF-0001,deleted,"Deleted - was Brecon Beacons National Park",GxFF,G,G,G,EU,-,-,0.00000,0.00000,n/a,
9116  GFF-0002,deleted,"Deleted - was Cairngorms National Park",GxFF,G,G,G,EU,-,,,,n/a,0000-00-00,0000-00-
9117   Deleted","Duplicate deleted - see GMFF-001<br>Duplicate deleted - see GMFF-001",0,NP-CG,-,England,-
9118  GFF-0003,deleted,"Chalk Sound National Park",GxFF,VP5,VP5,VP5,NA,-,,,,n/a,0000-00-00,0000-00-00,"Rer
9119  GFF-0004,active,"Dartmoor National Park",GxFF,G,G,G,EU,-,,50.74105,-3.92687,n/a,0000-00-00,0000-00-0
9120  GFF-0005,deleted,"East Bay Islands National Park",GxFF,VP5,VP5,VP5,NA,-,,,,n/a,0000-00-00,0000-00-00
9121  GFF-0006,active,"Exmoor National Park",GxFF,G,G,G,EU,-,,51.13253,-3.65847,n/a,0000-00-00,0000-00-00,
9122  GFF-0007,deleted,"Grand Turk Cays National Park, Land and Sea",GxFF,VP5,VP5,VP5,NA,-,,,,n/a,0000-00-
9123  GFF-0008,active,"Lake District National Park",GxFF,G,G,G,EU,-,,54.46111,-3.08848,n/a,0000-00-00,0000
9124  GFF-0009,deleted,"Deleted - was Loch Lomond and The Trossachs National Park",GxFF,G,G,G,EU,-,,,,n/a,
9125   Deleted","Duplicate deleted - see GMFF-0002",0,NP-LL,-,Scotland,-
9126  GFF-0010,active,"New Forest National Park",GxFF,G,G,G,EU,-,,,,n/a,0000-00-00,0000-00-00,"National Pa
9127   Renamed","Name Changed<br>Name Changed",0,NP-NF,-,England,-
9128  GFF-0011,deleted,"North West Point Marine National Park",GxFF,VP5,VP5,VP5,NA,-,,,,n/a,0000-00-00,000
9129  GFF-0012,active,"North York Moors National Park",GxFF,G,G,G,EU,-,,54.38700,-0.89200,n/a,0000-00-00,0
9130  GFF-0013,active,"Northumberland National Park",GxFF,G,G,G,EU,-,,55.28900,-2.19000,n/a,0000-00-00,000
9131  GFF-0014,active,"Peak District National Park",GxFF,G,G,G,EU,-,,53.30000,-1.75000,n/a,0000-00-00,0000
9132  GFF-0015,active,"Pembrokeshire Coast National Park",GxFF,GW,GW,GW,EU,-,,51.98634,-4.82716,"Cat V",00
9133  GFF-0016,deleted,"Princess Alexandra National Park Land and Sea",GxFF,VP5,VP5,VP5,NA,-,,,,n/a,0000-0
9134  GFF-0017,deleted,"Deleted - was Snowdonia National Park",GxFF,G,G,G,EU,-,,,,n/a,0000-00-00,0000-00-0
9135   Deleted","Duplicate deleted - see GWFF-074<br>Duplicate deleted - see GWFF-074",0,NP-SN,-,Wales,-
9136  GFF-0018,active,"South Downs National Park",GxFF,G,G,G,EU,-,,50.96860,-0.69430,"Cat V",0000-00-00,00
9137  GFF-0019,active,"The Broads National Park",GxFF,G,G,G,EU,-,,52.60492,1.60922,n/a,0000-00-00,0000-00-
9138  GFF-0020,active,"Yorkshire Dales National Park",GxFF,G,G,G,EU,-,,54.19629,-2.16252,n/a,0000-00-00,00
9139  GFF-0021,deleted,"Ferguson Bay Base Camp ",GxFF,VP8-Sh,VP8-Sh,VP8-Sh,SA,-,,,,n/a,0000-00-00,2016-01-
9140  GFF-0022,deleted,"Station 'Bl' Bird Island Station ",GxFF,VP8-SG,VP8-SG,VP8-SG,SA,-,,,,n/a,0000-00-0
```

Please note that the row numbers will change if you edit one of the faulty rows. You always can re-run the import to check the progress and to get up-to-date row numbers. Do not forget to save the CSV file in your editor before proceeding.

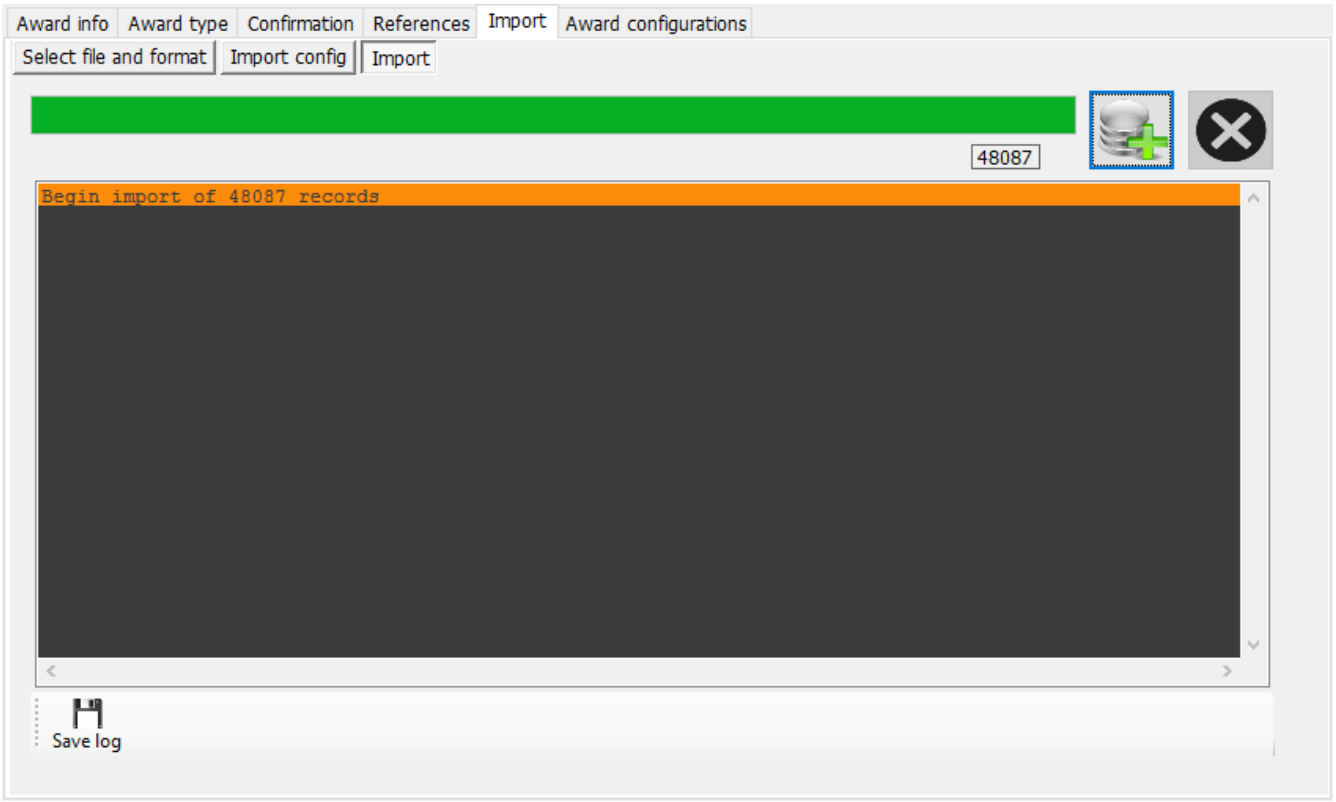
After fixing all the CR/LF problems in the CSV file, my import log file looks like this:

```
Begin import of 48087 records
ROW: 6400: FFF-0178 DXCC not found: FO-FP
ROW: 7468: FFF-1246 DXCC not found: FK-NC
```

This is now a different issue you should not face because we are updating the awardOverride file on a regular basis. Log4OM cannot assign a valid DXCC country to FO-FP and FK-NC. I think this should mean FO **F**rench **P**olynesia (175) and FK **N**ew **C**aledonia (162), both are not valid DXCC prefixes.

Should you face an issue like this I would recommend letting us know in the awards forum and we will have a look. If needed, we will update the exception file.

The exception file already has been updated with these two issues, so everything should be fine now:



Well done! You have updated the WWFF file with the latest list from the WWFF webpage.

If you have any problems, please let us know on the Log4OM v2 Award Support forum:

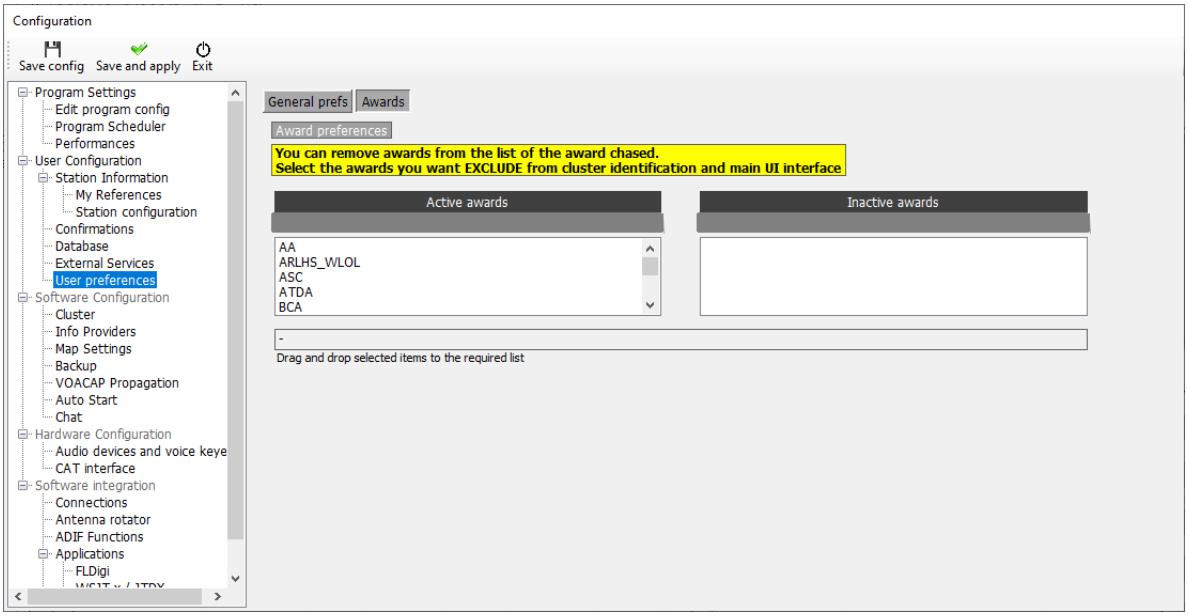
forum.log4om.com

Compiled by Claus, OE6CLD Log4OM Award Manager

Awards list customising

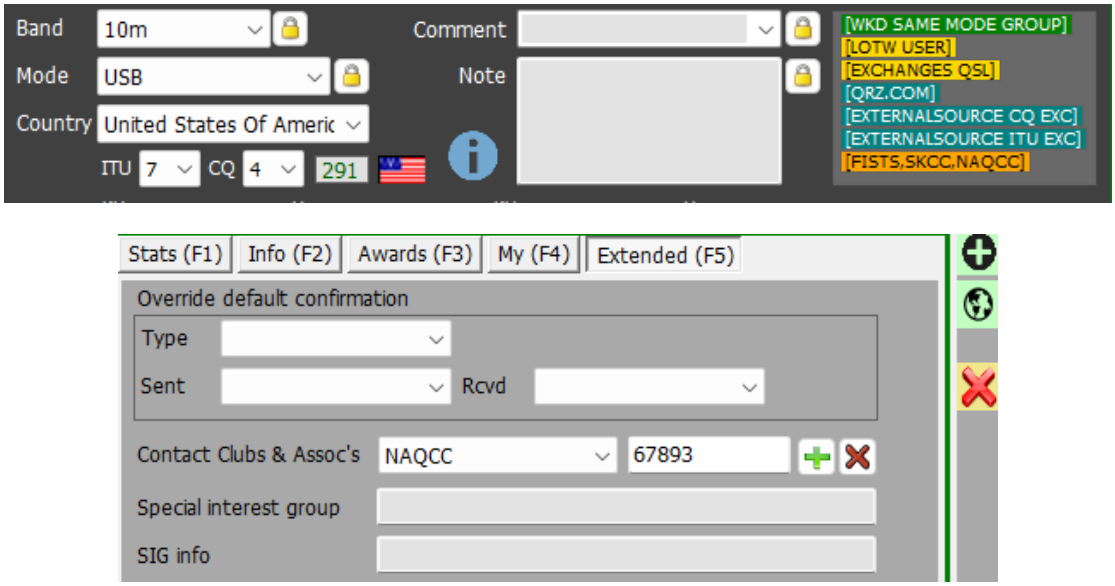
Not all awards are of interest to the user and in this case the user can select just the awards of interest to be displayed in the main UI by selecting settings/Program configuration/User preferences and then selecting the awards tab.

Unwanted awards can be dragged from the ‘Active awards’ box and dropped into the ‘Inactive awards’ box – Then click ‘Save and apply’

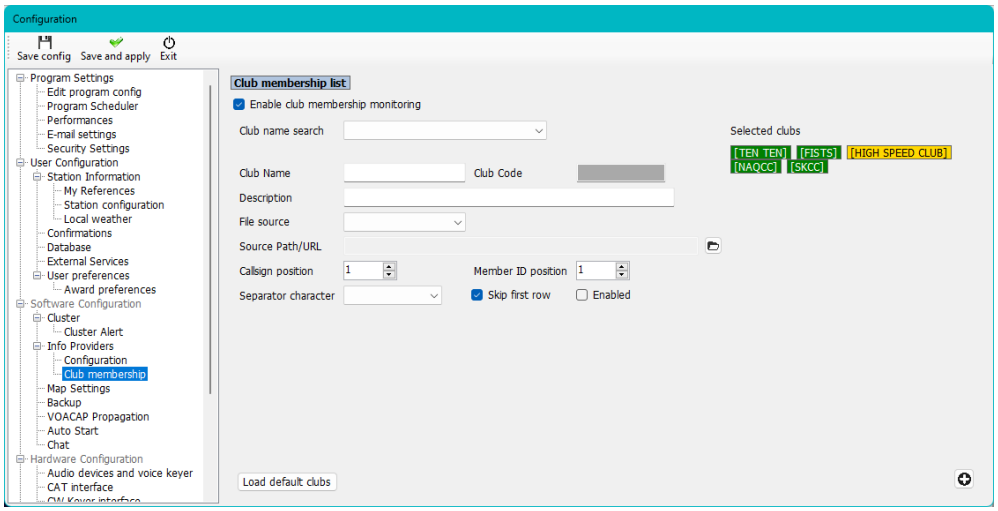


Club Membership lists

Log4OM provides a facility to recognize if station is a member of a club and display the clubs in the info box as below add a member's membership reference to the QSO.



Enable this facility from the Program Configuration/Software configuration/info providers/Club membership menu.



1. Enable the membership engine by checking the box at the top
2. Use the club's name search field to select one of the default clubs – Selected clubs are highlighted green in the matrix of clubs, those not selected/enabled are highlighted yellow. A selected club can be de-selected by unchecking the lower 'Enabled' check box
3. Alternatively, a user can provide his own list as a csv file providing the format is membership number, call sign e.g. 2879, G4POP
4. Having inserted the club name and the file location select the call sign position, Member ID and Separator character used in the file.
5. If the first row contains field header names check the 'Skip first row' box
6. Check the lower 'Enabled' check box.
7. Click Save and apply.

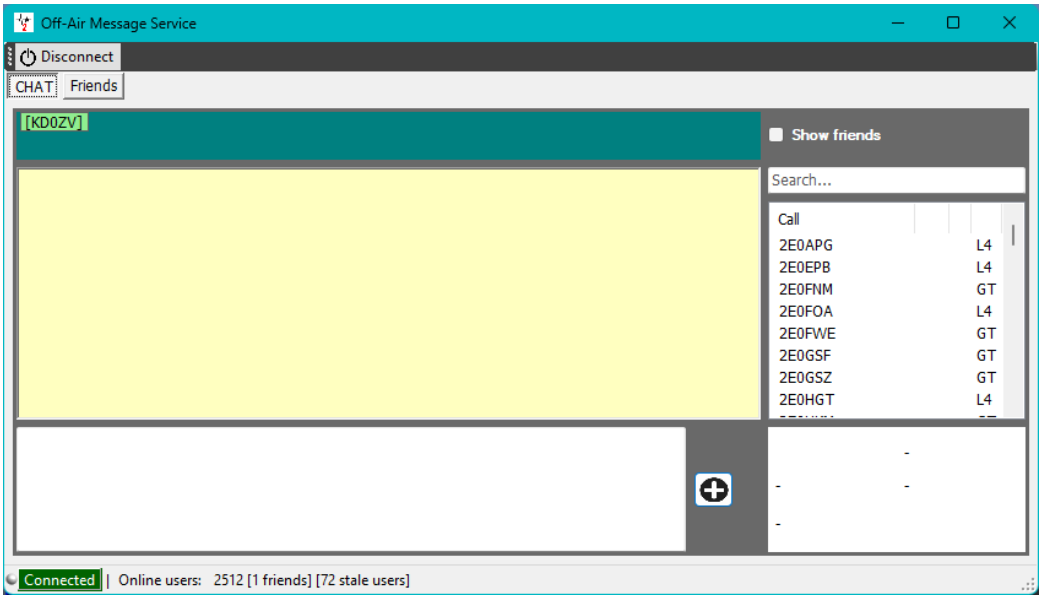
PLEASE NOTE:

The default lists are updated automatically or can be forced to update from the settings/update resources/club membership menu.

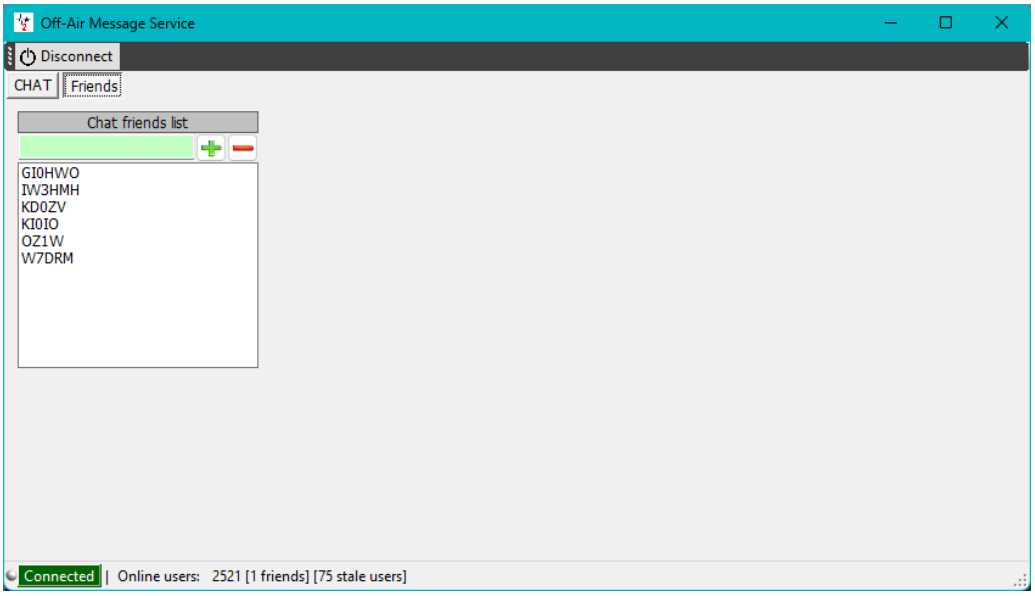
User Chat system (Off-Air Messages)

Users of GridTracker can Chat/message each other in real time by using the Off-Air Message service accessible from the ‘Connect’ menu.

1. Click Utilities/User Chat system
2. Select the station to chat to, from the list on the right.
3. Enter the message in the lower window.
4. Click the add (+) button.
5. Read the reply.



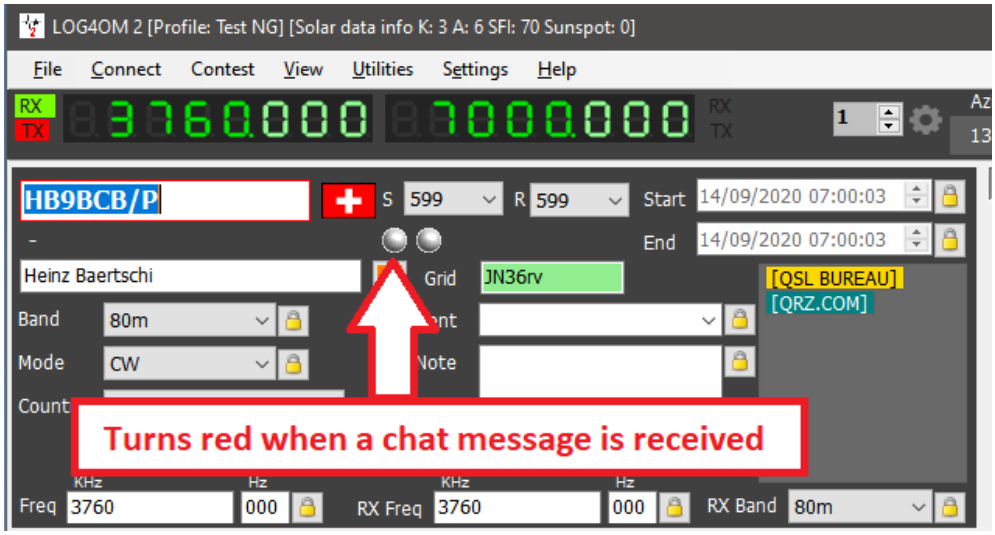
6. Select friends in the list and right click then click ‘add or remove friend’ to add them to the friends list.
7. Check the ‘Show friends’ box to review friends
8. A list of friends is displayed in the ‘Friends’ tab



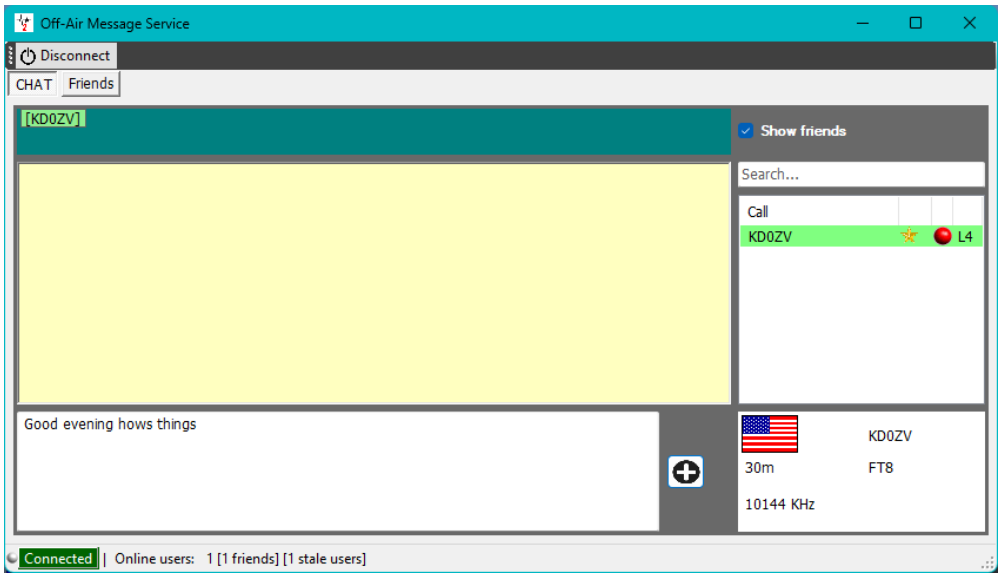
9. Alerts and auto start for the Off-Air messenger can be configured in the Program Configuration/Chat tab

Chat message alerts

When a chat message is received an audible alert is sounded and the chat LED changes to red as below



Clicking on a friend that is active will display his current frequency and mode and allow messages to be sent between the two parties.



- The red dot to the left of the call indicates your friend is on air.
- The gold star indicates a friend.
- L4 or GT indicates that your friend is using either GridTracker or Log4OM

Log4OM V2 connections explained

Log4OM supports an increasing number of external services (inbound and outbound), through a highly flexible configuration mechanism.

UDP network services

Inbound services description

[INBOUND] ADIF MESSAGE:
This service is able to receive an INCOMING adif message via UDP, containing an ADIF string. The string is then processed and added to the Log4OM database. Messages received through this system are passed through Log4OM data quality routines and uploaded to external services, if configured and available.

[INBOUND] N1MM MESSAGE:
Log4OM is able to receive N1MM messages.

Supported messages are:

- ContactInfo (new QSO added),
- ContactReplace (QSO update),
- ContactDelete (QSO removal)

[INBOUND] JT MESSAGE:
Log4OM is able to receive UDP messages generated by JTDX / WSJT-X applications.

Inbound message from JTDX/WSJT-X update the Log4OM main QSO input fields with Call, Band, Frequency and mode, thus enabling users to view all lookup and worked before information in Log4OM for the station currently being contacted in JTDX/WSJT-X.

All other messages are discarded from this UDP connection.

[INBOUND] MESSAGE LISTENER:
This is a technical type of inbound message which is useful for debugging purposes and to detect if the other service is sending messages properly.

Everything received by the 'Message listener' is saved into the Log4OM program log.

Outbound services description

[OUTBOUND] ADIF MESSAGE:
Log4OM will broadcast every new QSO added to the database through user interface, ADIF automatic import (ADIF monitor) and UDP inbound messages.

ADIF messages can be chained together, so Log4OM can receive an UDP ADIF message (inbound) from an application, save it and re-broadcast (outbound) to another application, listener or another Log4OM instance that is listening for inbound UDP messages

[OUTBOUND] PSTROTATOR:
Messages directed to PST Rotator. Please note after configuring PSTRotator in program settings the user **must** create an outbound connection of PSTROTATOR type to actually send messages to PSTRotator.

[OUTBOUND] CALLSIGN:
The Call signs entered into the input field of the main Log4OM user interface, keyer interface or contest interface are broadcasted as UDP messages using this outbound service type.

Multiple connections - Inbound and Outbound

Log4OM is able to receive via a virtually unlimited number of ports for each inbound message.

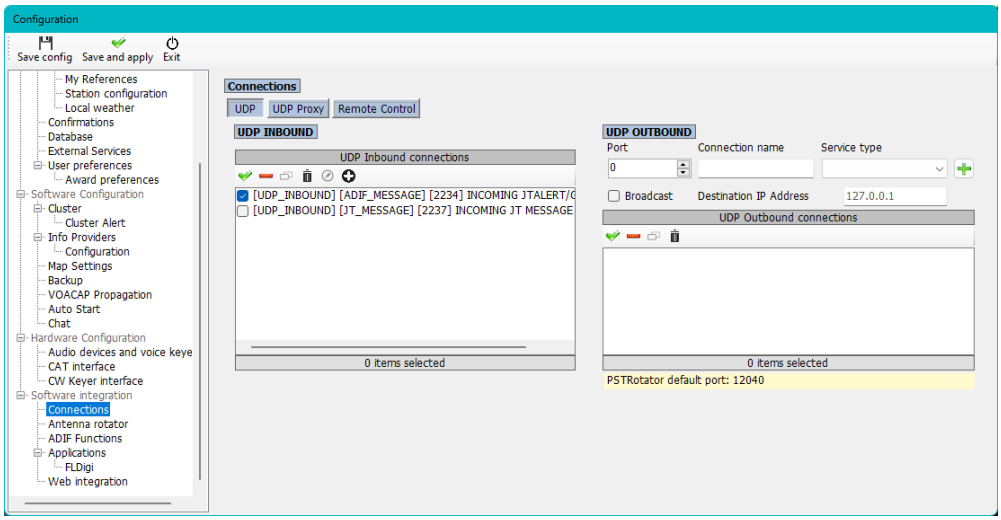
The user may listen for multiple ADIF MESSAGE senders that are working on different ports, or receive JT messages from both WSJT-x and JTDX running concurrently.

At the same time, each message type forwarded to the outbound UDP channel will be sent on all services of the required type. Users can create multiple [OUTBOUND] ADIF MESSAGE services (on different ports).

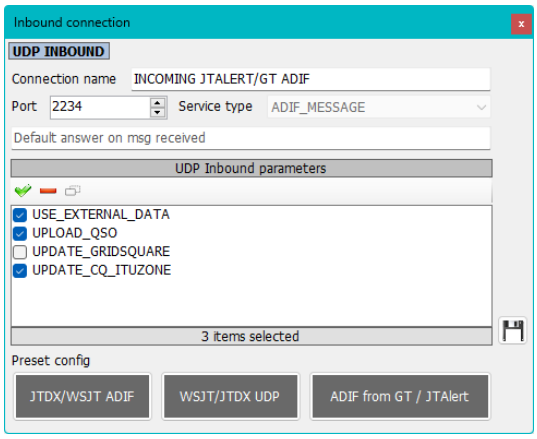
When Log4OM sends an ADIF message, this will also be sent to all outbound services of that type you have enabled.

UDP network services – Settings

Inbound



To edit an existing service, press the Pen button 



To add a new service, press the Plus button. 

To delete an existing service, press the Bin button. 

To select/unselect (Enable/Disable) a service use the check boxes or Green check mark and Red minus sign.

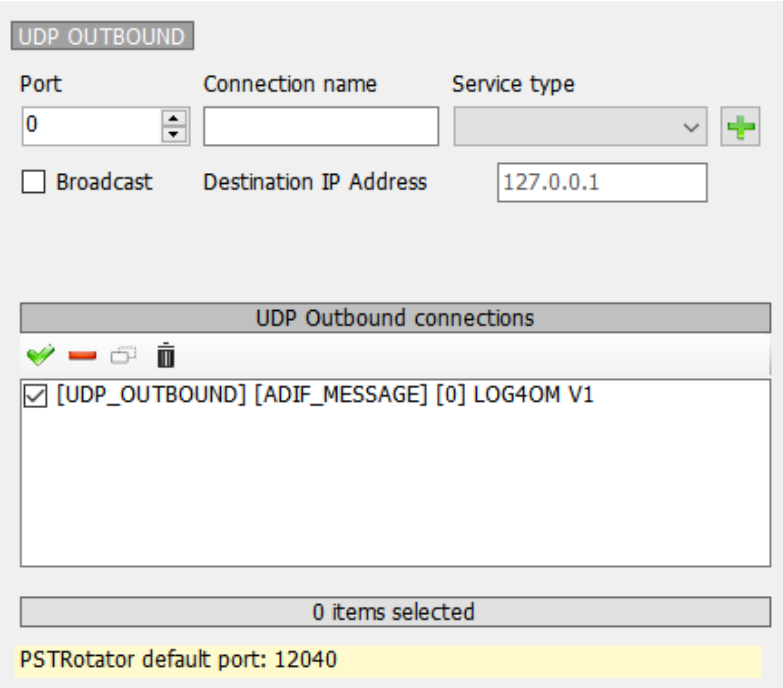
Port: The port Log4OM is listening to for UDP messages

Connection name: Friendly name for the connection

Service Type: Inbound service type

Default answer: A message that is sent back to the sender when a packet is received (may be required as acknowledge from other applications)

Outbound



Port: The port Log4OM is using to transmit UDP messages

Connection name: Friendly name for the connection

Service Type: Outbound service type

Broadcast: Send broadcast UDP message

Destination IP address: Default (empty) is 127.0.0.1 (loopback – local host)

UDP Proxy

UDP data can only be received by one listener at a given time. Multiple listeners on the same port will compete for the same packet but only one, without reproducible rules, will be able to retrieve it.

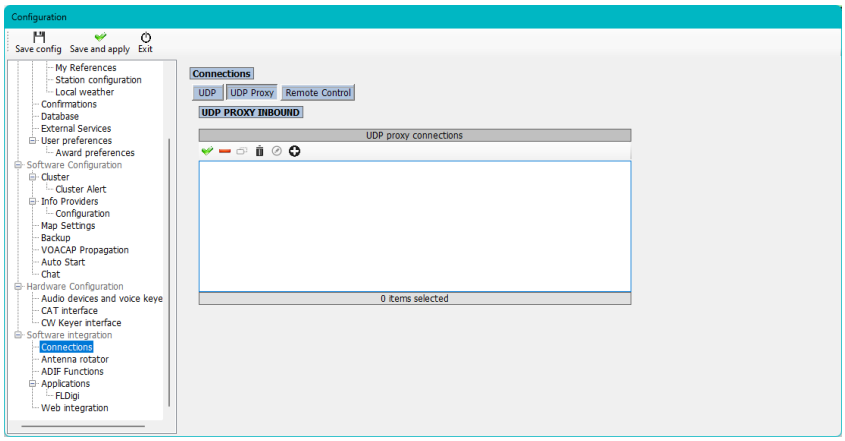
Some applications send UDP packets that are used by other applications, but those packets may be of interest to Log4OM. To allow Log4OM to listen those packets, a proxy function is implemented in Log4OM.

Log4OM offers an UDP proxy that receives a packet, uses it and then resends the same packet on another port (or another IP/port if necessary). It can be used to forward UDP messages through firewall port 80 or other requirements, while still being able to use the captured messages.

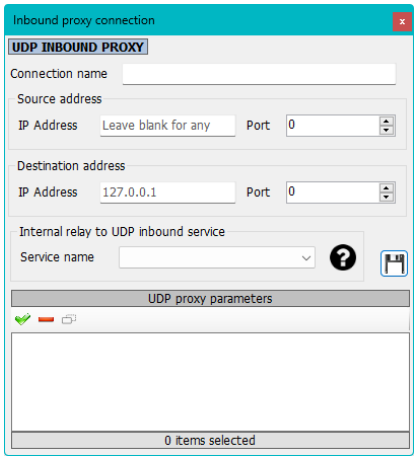
Proxy should have a “service type” indicated. All messages received will be managed from Log4OM like inbound messages of the inbound type indicated. e.g. Log4OM can read an incoming ADIF data with the [INBOUND] ADIF MESSAGE UDP and rebroadcast the data to another instance of Log4OM, possibly at a remote location.

Proxy will extend capabilities of UDP inbound by adding packet forwarding.

If it is required to listen for messages that do not need to be repeated (Forwarded) elsewhere, you should use an UDP INBOUND configuration instead.



To add a new service, press the Plus button. 



To delete an existing service, press the Bin button. 

To select/unselect (Enable/Disable) a service use the check boxes or Green check mark and Red minus sign.

To edit an existing service, press the Pen button 

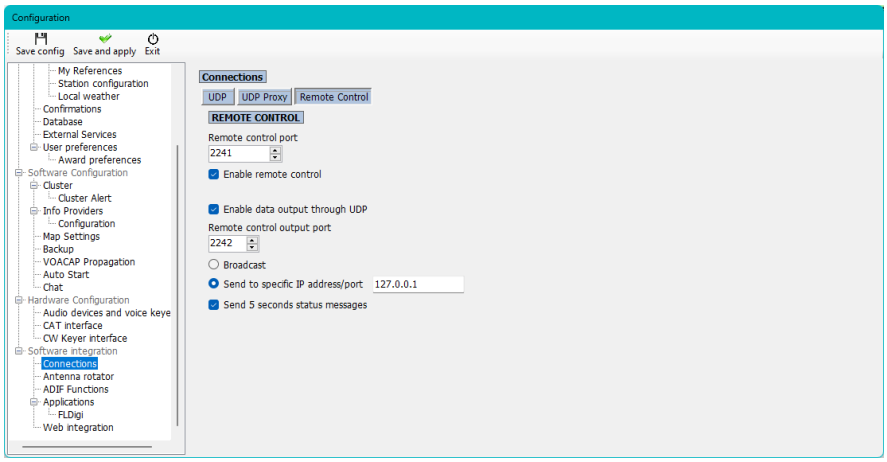
Connection name: Friendly name for the connection

Source address: The address of the server that is sending the message. IP can be blank (any) while PORT is necessary.

Destination address: The IP of the target computer where the message should be sent. The local computer is 127.0.0.1

Remote Control

Log4OM has a feature that allows other applications to remotely interact with the software. It's called REMOTE CONTROL and is available on the Remote-Control tab. More messages will be added in future.



Messages are in the format:

<MESSAGE TYPE><KEY>PARAM<KEY>PARAM…

Supported messages:

CALLSIGN

Message format: <CALLSIGN>{callsign}

Response: <RESULT>OK

Usage: Log4OM will put the provided callsign in the lookup area of the active windows

WORKED

Message format: <WORKED>{callsign}

Available responses:

<RESULT>YES

<RESULT>NO

WORKED + BAND

Message format: <WORKED>{callsign}<BAND>{band}

Available responses:

<RESULT>YES_SAME_BAND

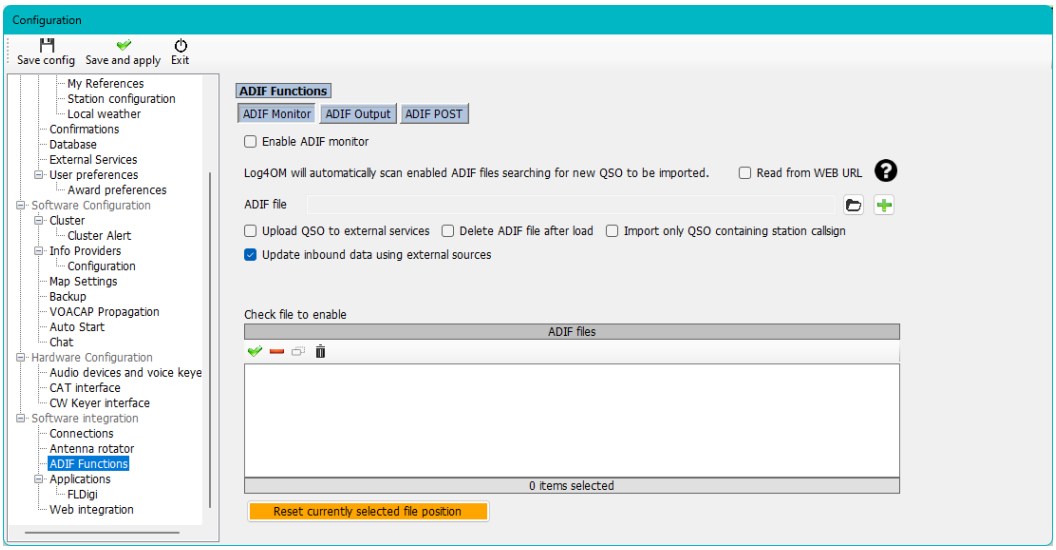
<RESULT>YES

<RESULT>NO

ADIF Functions

ADIF Monitor

Log4OM can listen to multiple ADIF file changes at the same time. When a difference on the ADIF file is detected, Log4OM will perform the import action.



There are some options on the import phase. Those options are:

Upload QSO to external services - This will upload the QSO's to the on line services like eQSL, HRDLog, QRZ etc

Delete ADIF file after load - Deletes the original ADIF file as soon as the download is finished

Import only QSO containing station call sign. This option is useful when sharing common station using a single instance of WSJT-X, JTDX or other digital mode software that only allow you to change the call sign. We strongly suggest to avoid use of the DELETE FILE with IMPORT ONLY QSO CONTAINING STATION CALLSIGN to avoid deleting other OM QSO's

Please note the IMPORT ONLY QSO CONTAINING STATION CALLSIGN will also import QSO where the STATION CALLSIGN is missing.

Update inbound data using external sources: The imported QSO's have missing data added using the external sources selected by the user (QRZ etc)

Log4OM can also monitor for remote files over internet. In that case a file check is performed every 60 minutes (fixed) if an internet connection is available.

In this case the application is not able to delete ADIF file, but can call a remote URL passing parameters via a query string (GET) to a remote listener that may take actions on the remote file automatically (some web programming skills are required).

Log4OM for local files keeps track of the last character read and starts an import from this character if a file is not smaller than expected (aka new). A button to reset currently file position is available and works on the selected file (only local files are affected, remote files are always downloaded and parsed fully)

ADIF output

Log4OM is able to write an output ADIF file on each QSO saved into the database (via the user interface, UDP message or ADIF monitor). A bulk ADIF import will not trigger this function.

ADIF post

Log4OM is able to send a POST/GET message to an external website, passing custom parameters and required payloads.

Available payloads that can be passed either by GET or POST are:

<ADIF>: The adif string
<STATIONCALLSIGN>: The sender station callsign
<DATETIME>: current date + time in yyyyMMddHHmmss format
<DATE>: current date in yyyyMMdd format
<TIME>: current time (UTC) in HHmmss format

ADIF output usage scenario

Imagine a shared club station installation of Log4OM. Each QSO being entered can be:

Exported to an ADIF file at the end of activities and loaded into your main log

Sent through UDP to your home pc, assuming you have Log4OM running and firewall ports are open and correctly configured

Sent to a remote website (your hosting, your home NAS, …) that is sharing a specific web page.

This information can be retrieved at a later time using ADIF MONITOR to read the remote file created on the server, or by opening a custom coded page that will retrieve previously sent QSO's that may have been saved somewhere, in a remote file or a remote database.

Here is an example of a small page that you can used as template (PHP).

This page will receive a POST message with some parameters, will save the ADIF in a field called “your callsign.txt” on the server that you can point to at some later from the users home instance of Log4OM.

upload.php

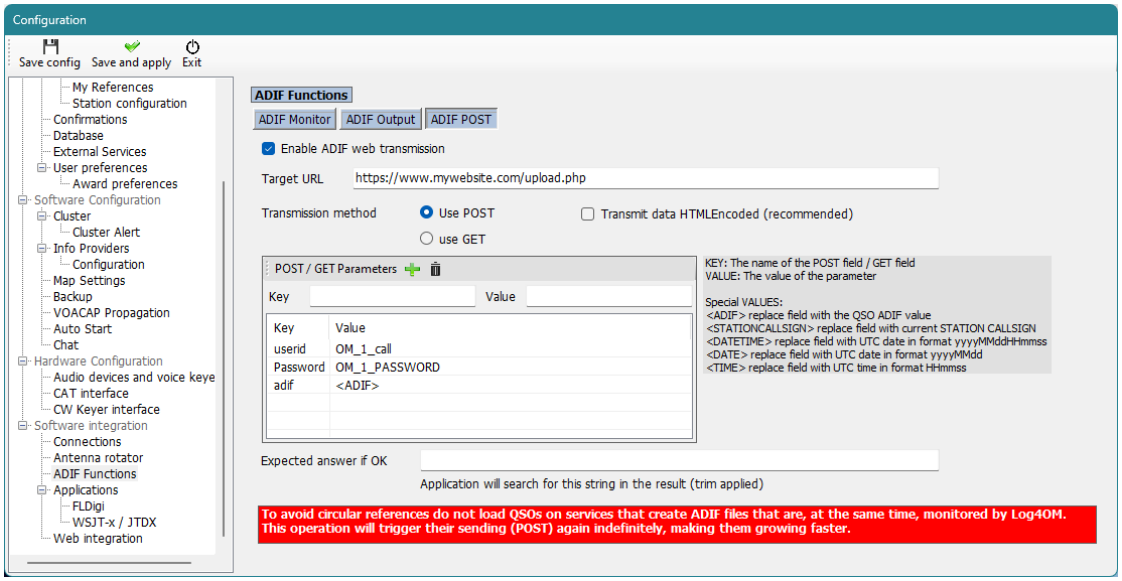
```
<?php

$allowedPassword = array("OM_1_CALL|OM_1_PASSWORD", "OM_2_CALL|OM_2_PASSWORD",
"OM_3_CALL|OM_3_PASSWORD");

if ( in_array($_POST["userid"] . "|" . $_POST["password"], $allowedPassword) )
{
     $my_file = $_POST["userid"] . '.txt';
     $handle = fopen($my_file, 'a') or die('Cannot open file:  '.$my_file);

      if (flock($handle, LOCK_EX))
     {
           $data = $_POST["adif"] .PHP_EOL;
           fwrite($handle, $data);
           echo "OK";
           fflush($handle);            // flush output before releasing the lock
           flock($handle, LOCK_UN);    // release the lock
```

```
        }
      else
      {
            // should never happen as flock is a blocking call
            echo "AGAIN";
        }
        fclose($handle);
}
else
{
        echo "USER/PASSWORD UNKNOWN (required fields are userid/password/adif)";
}
?>
```

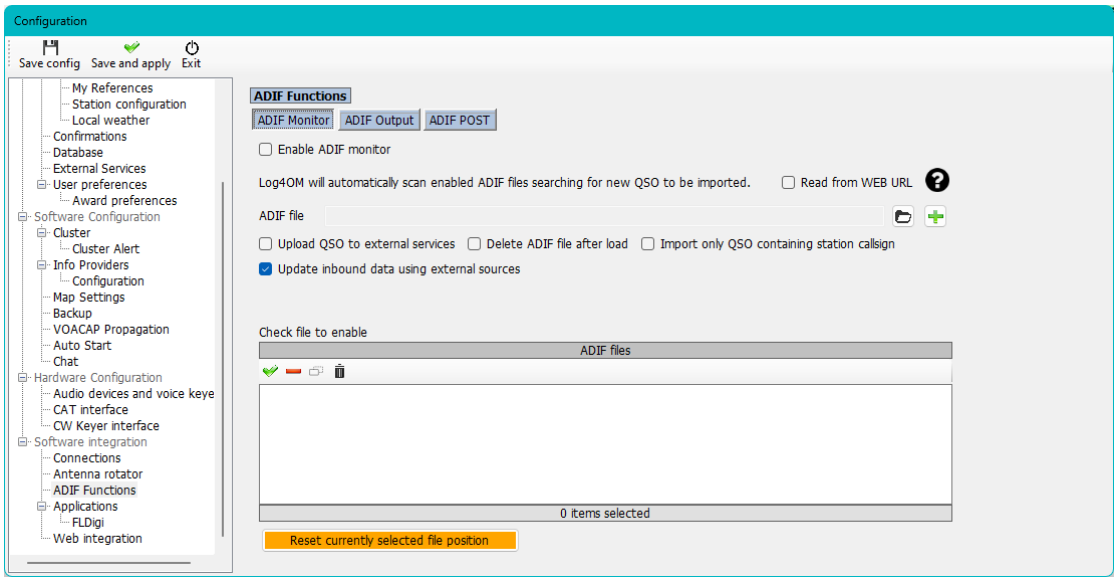
Assume this page is placed here: https://www.mywebsite.com/upload.php
The page is not returning anything (nothing on ECHO returned if everything is OK)

This page will receive 3 parameters:
userid, password, adif

An example of how the page can be configured is shown below:



The page will generate a file called OM_1_CALL.txt in the same folder, so that it can retrieved with ADIF monitor:



There is not a “remote delete” service in the web page, so the URL called after the download is empty in our example.

Program Configuration Menu’s

Program Configuration

Log4OM V2 can be as powerful or as simple as the user requires according to how the software is configured, it is suggested that the user selects the configuration settings most suitable to his/her method of operating.

What follows is a brief description of each tab in the Settings/Program configuration menu for a more detailed explanation of each function see the function specific areas of this user guide.

Common functions

At the top of the main configuration window are three icons as follows:

1. Save config - This saves the settings without exiting the configuration menu
2. Save and apply - This saves the settings and closes the configuration window
3. Exit - This exits the configuration window without saving any changes made.

Program Settings

This tab sets the basic parameters of the software and is generally self-explanatory, but some expansion of some selections is required.

Check for updates

If this box is checked the user will be notified upon opening the program if later versions are available for download.

Check for Public Beta updates

If this box is checked the user will be notified upon opening the program if a Beta version is available for download.

NOTE: Beta versions can be unstable and should only be installed by experienced users – **ALWAYS SAVE REGULAR BACKUPS IN ORDER TO PREVENT LOSS OF DATA in case a Beta version crashes**

Default Log level

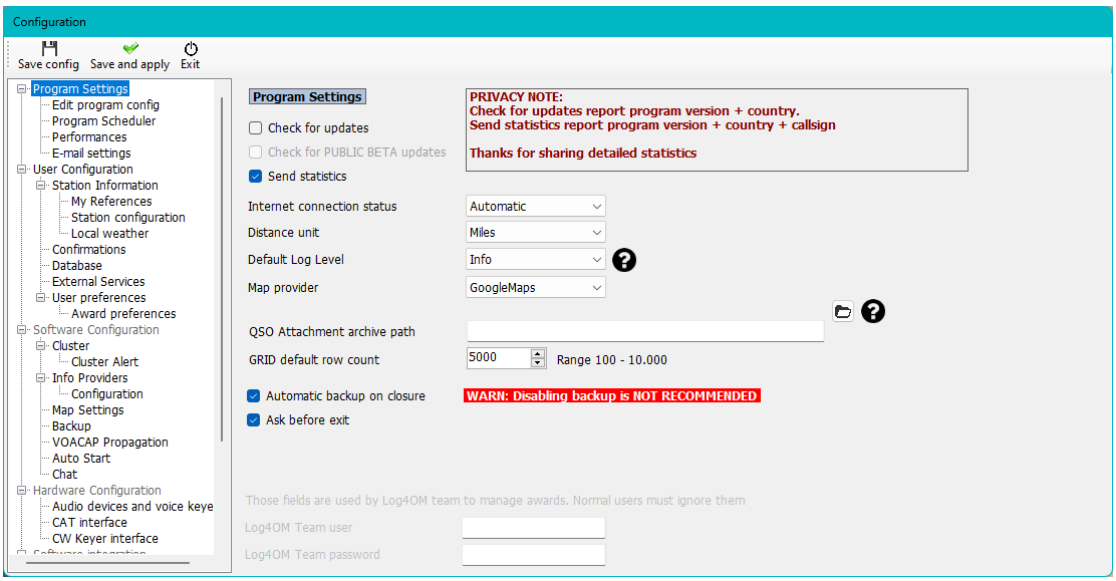
This should generally remain at 'Info' unless one of the Log4OM support team requests it to be changed for trouble shooting.

QSO Attachment archive path

Set a location here for downloaded images etc to be stored, a useful location is C:\.....\AppData\Roaming\Log4OM2\user\attachments e.g., eqsl QSL cards.

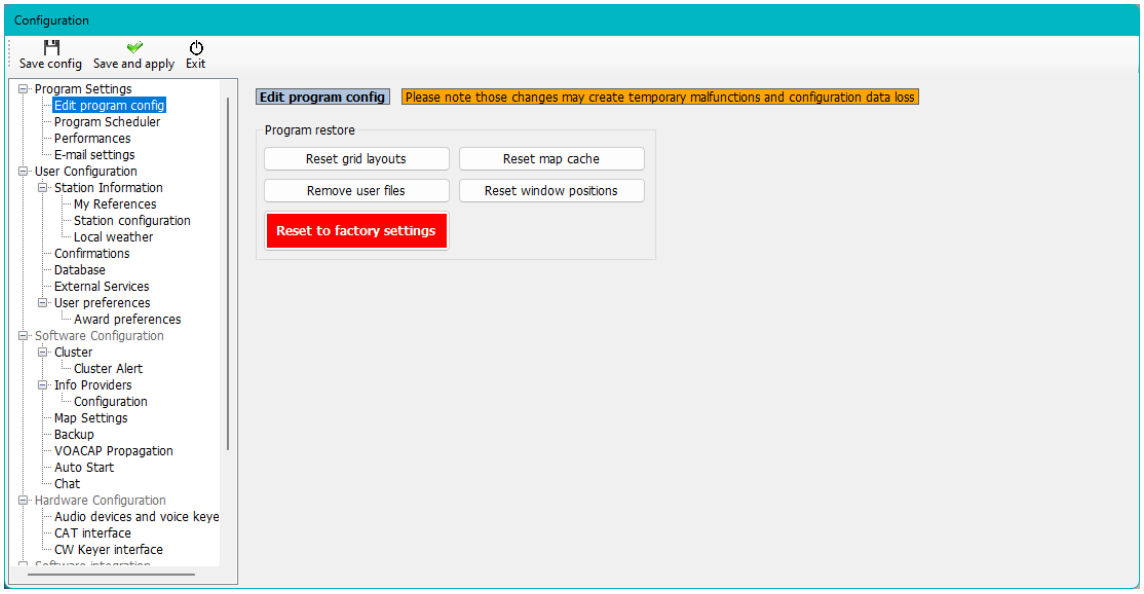
Grid default row count

The number of entries displayed in the data grids like Recent QSO's. It is not necessary to display all entries which might slow down the display in the case of very large logbooks. Regardless of the number of entries being displayed all lookups, sorting and filtering is done on the complete database.



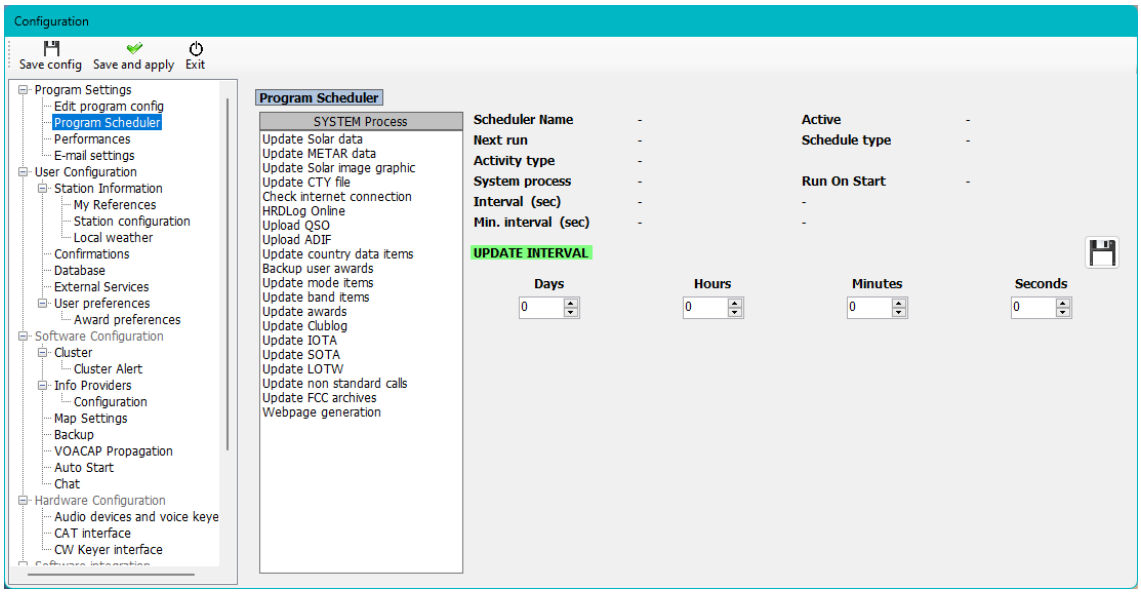
Edit Program config

This provides a method to revert to the program defaults in situations where the user regrets the changes made to layouts and settings.



Program Scheduler

Log4OM imports and updates many data files in an endeavour to provide the most accurate information for its users, this window allows the user to set the frequency with which those files are updated. Each change must be saved by clicking the small 'Save' floppy disk icon at the lower right.

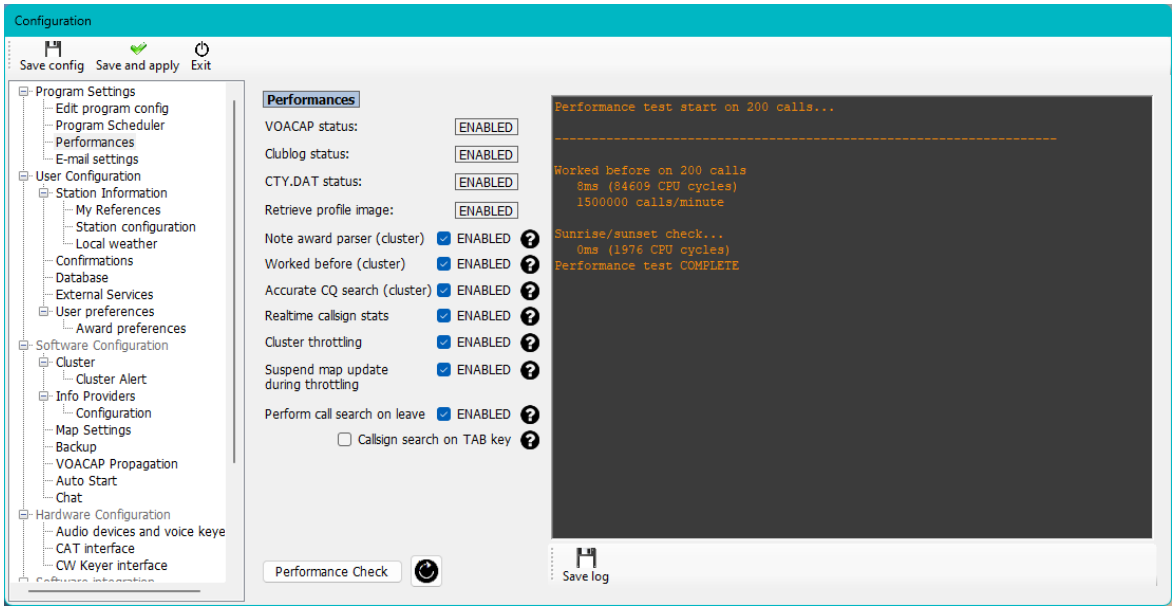


Performance

In situations where perhaps the PC is less than capable of having performance issues it is possible to enhance the performance in the ‘Performance’ menu by unchecking some of the lookup and parsing boxes.

Performance check

Performance can be compared by clicking the ‘Performance Check’ button



User Configuration

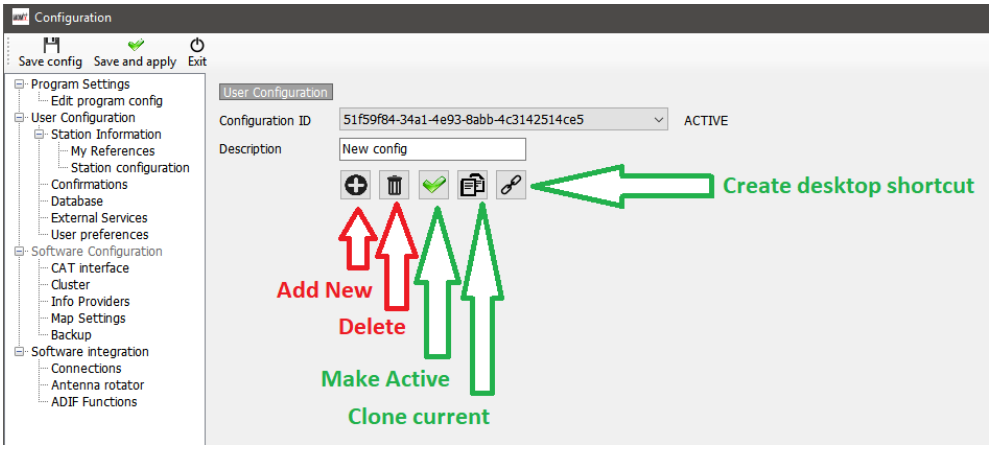
The user may have as many different configurations (Identities or setups) required, perhaps a Club, home, cabin, contest, special event, DXPedition or another family member configuration.

- Create a completely new identity by clicking on the + 'Add new config' button.
- By cloning an existing configuration by clicking the 'Folders' icon 'Clone current config' button, this saves time if the new configuration is similar to the original, perhaps just a /P call with different Location.

Creating a desktop shortcut for a new ID

A desktop shortcut can also be created for each current config by clicking the 'Chain' icon 'Create link on desktop'

Configs are deleted by first selecting the config to be deleted from the drop down list followed by clicking on the 'Trash can' Icon

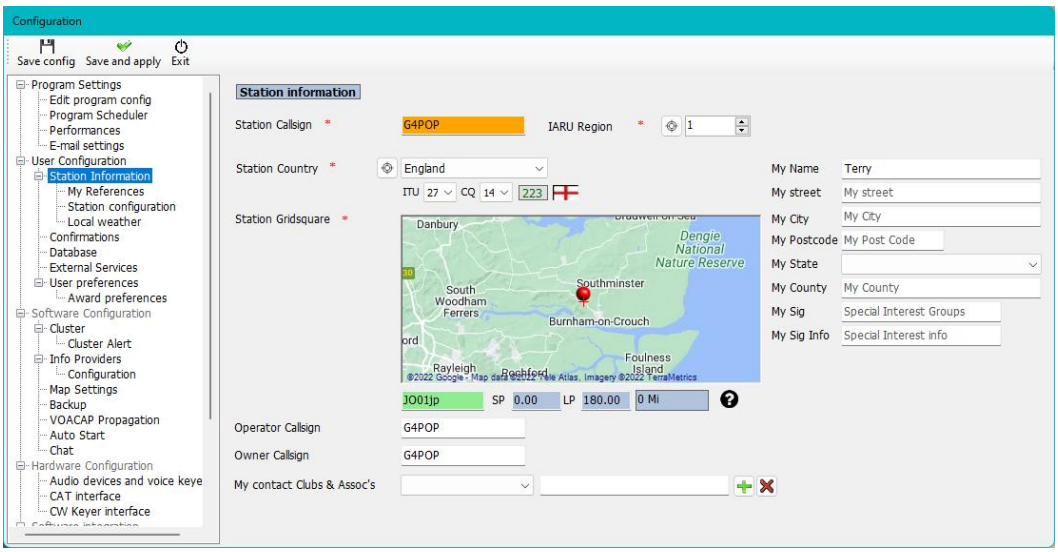


Creating a new Identity (Config)

- Either click the New or Clone icon as identified above
- Add a name for the ID in the Description field
- If a new ID is being created complete the various information for a new configuration or if 'cloning' an existing config make whatever changes are required for the new configuration.
- Click the 'Chain' desktop shortcut icon to create a new desktop shortcut
- Click the green check mark to make the configuration active
- Click 'Save and Apply'

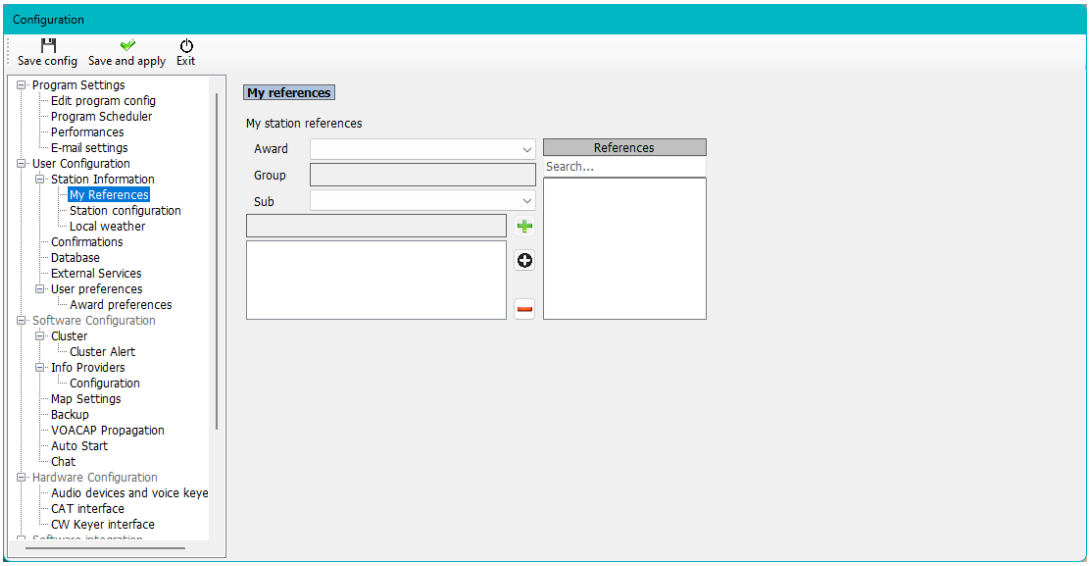
Station Information

This tab contains all of the information relating to the user it should be completed fully to allow the program to function to its fullest capabilities. The fields marked with a red asterisk are mandatory.



My References

If the user is active in one of the award schemes as an activator, e.g. activating a summit for SOTA or an island for IOTA this is where the activators (Users) references are set.



- Select the award from the award drop down menu
- Choose the relevant group and subgroup
- Double click the reference being activated or select and click the Plus + sign
- Save and apply

Station Configuration

The users station equipment (Rig, Power & Antenna) can be added and associated with the bands to be used.

Example of a typical set up as screenshot below:

Radio 1: Used for HF and 6 meters has three antennas available.

a. Multiband dipole for 80 – 40M

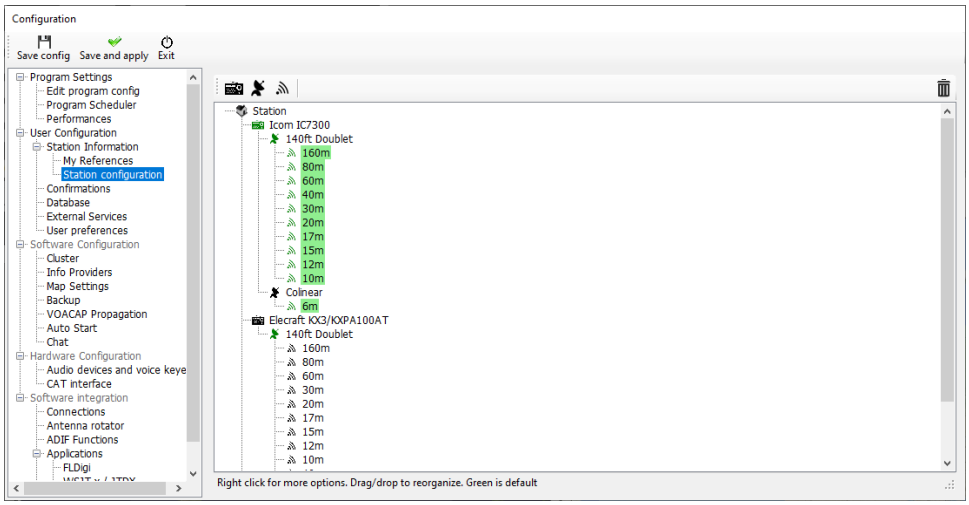
b. Tri-Band beam for 20. 15 & 10M

c. 5 element Yagi for 6M

Radio 2: Used for VHF/UHF

a. 12 element Yagi for 2M

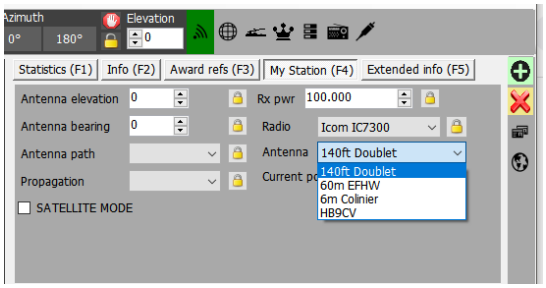
b. 18 element Yagi for 70cm



- Click on the Radio Icon to add a radio to the station
- Click on the Sat Dish to add an antenna to a radio
- Click on the ‘Radiating’ icon to add bands to an antenna

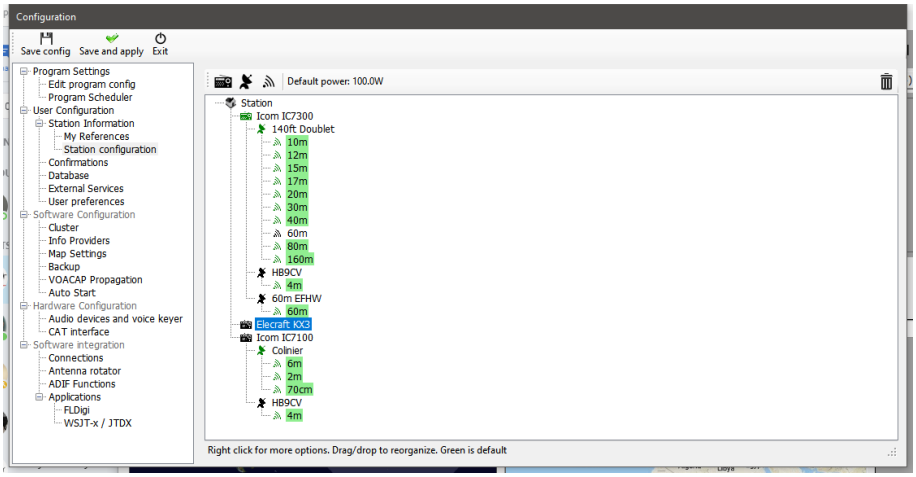
Adding hardware

Adding the radios, antennas and bands will include those antennas and radios as selection choices in the My Station (F4) input pane as below.



Setting Defaults

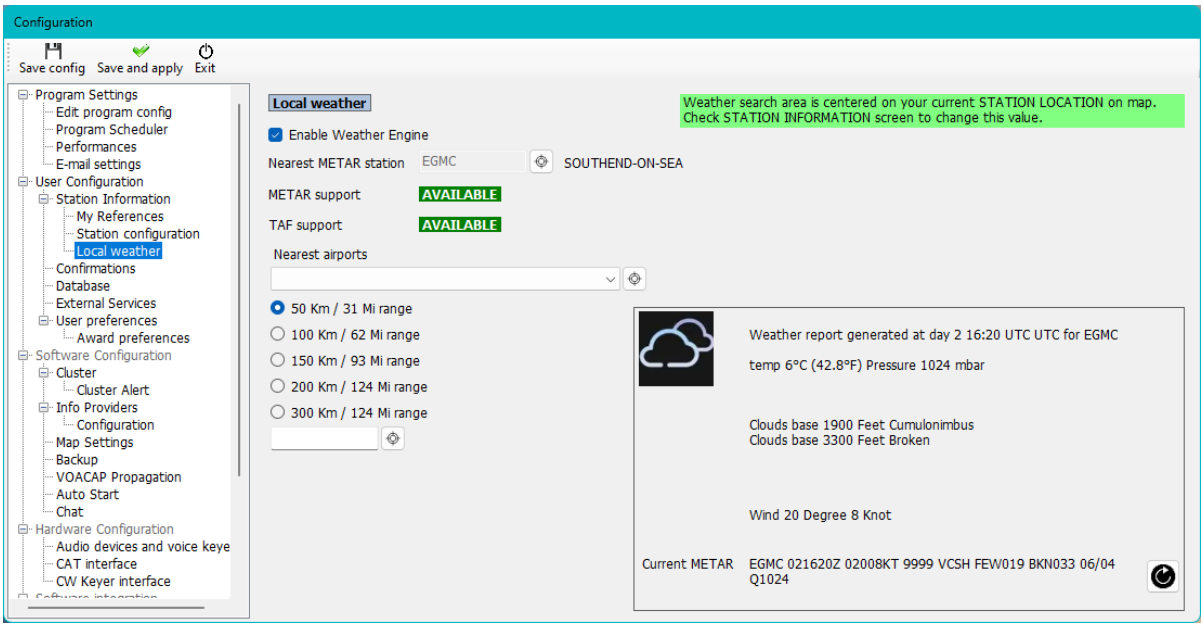
To set which radios, power, antennas and bands are the defaults that will be selected automatically according to the active band it is necessary to right click on the Radio, antenna and bands and select 'Default' – Bands set to default will be highlights in green.

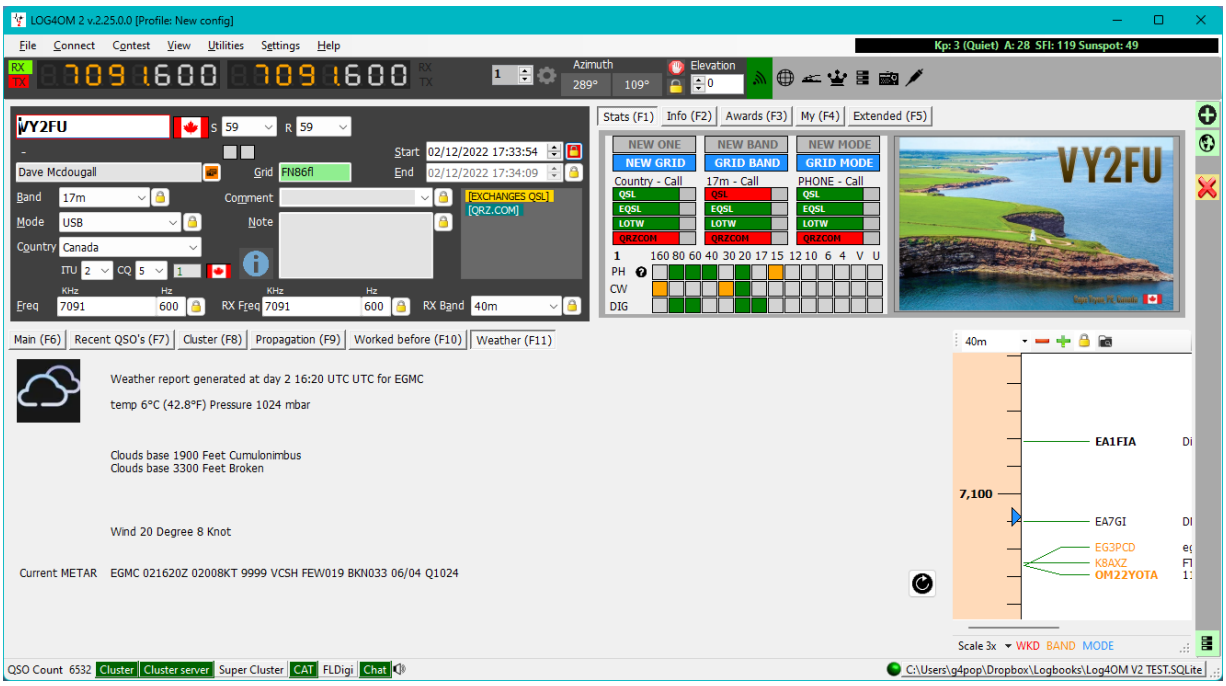


Local Weather

Log4OM will retrieve the weather data from the nearest METAR station/Airport for display in the Weather' tab of the main UI and for inclusion in CW macros used in the Log4OM CW Keyer.

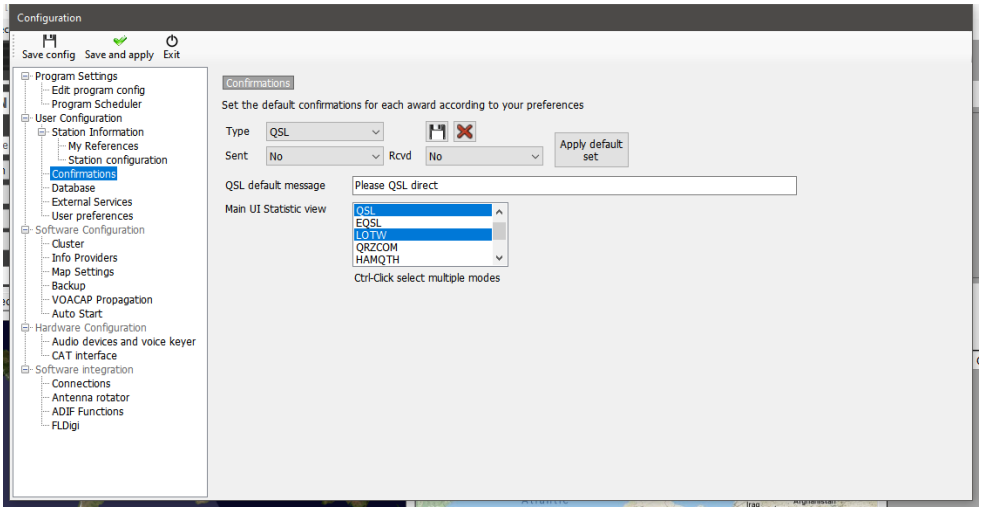
Select the required source METAR station by clicking on the small icon to the right of the fields.





Confirmations

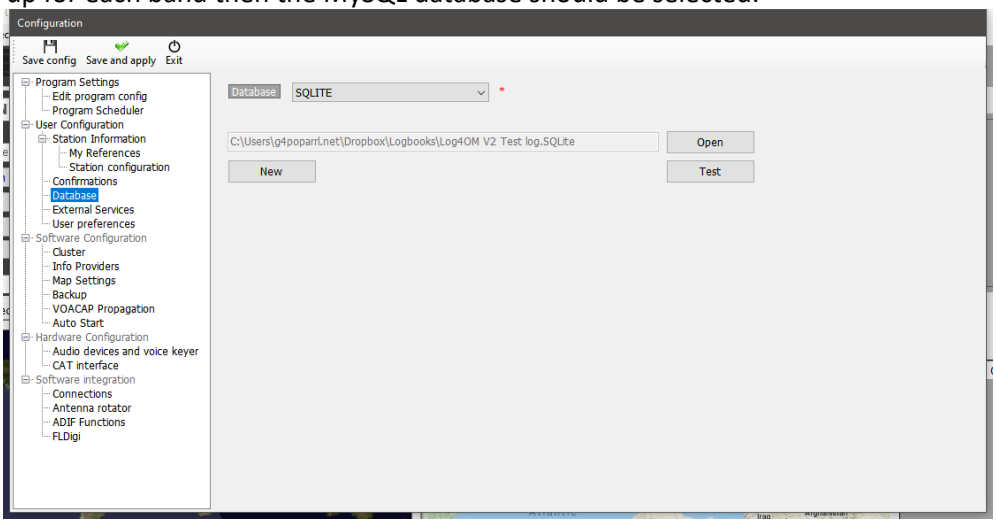
There are many methods for confirming a QSO and the user may need to mark the status differently for each, the confirmations tab provides personalisation of user confirmation requirements and display.



Database

The user may create as many logbooks (Databases) as required, perhaps Home, Portable, Club, Contest call etc.

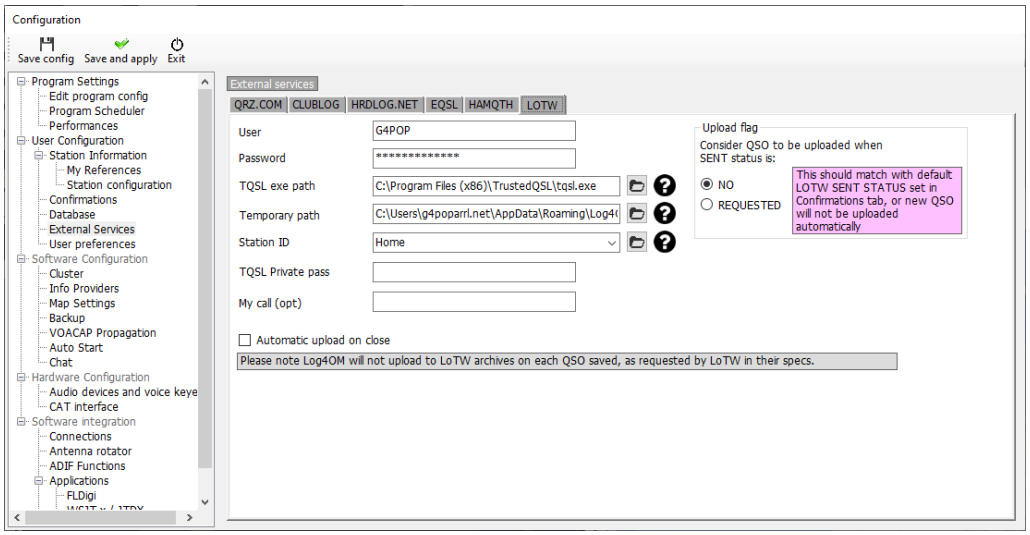
The standard database format is SQLite which will be ideal for the average user, if multiple stations require simultaneous logging to a common database, perhaps a contest group or Expedition where there could be a station set up for each band then the MySQL database should be selected.



External services

Log4OM provides both manual and automatic real time upload of QSO's to online logbooks like QRZ, Clublog, HRDLog, eQSL, HamQTH and LOTW.

User names, passwords, Station ID, Nicknames and API codes can be entered for each of the on-line logbooks and if automatic upload is required selected by checking the appropriate check box.

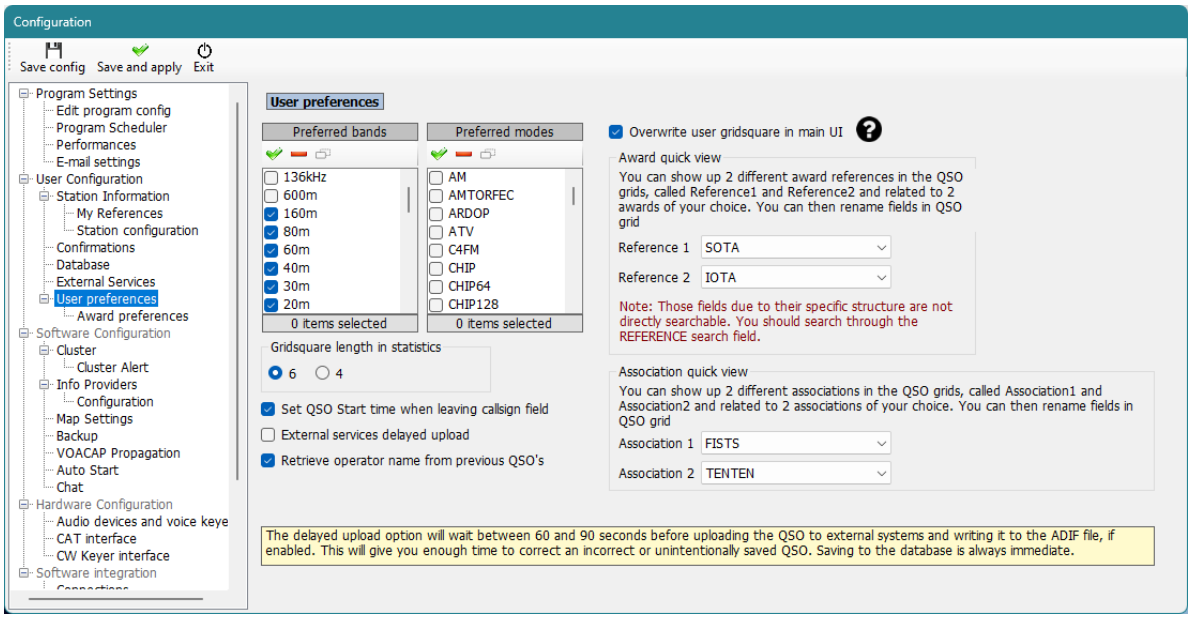


Passwords, API Keys and user names are case sensitive!

User preferences

The user should select the bands and modes of operation and interest and the preferred grid reference format (6 or 4 digits)

Checking the 'Set QSO start time when leaving the call sign field' box makes keyboard only operation very easy. Enter the call sign while waiting to call the station, when contact is made tab out of the call sign field to set the start time and adjust RST or add comments etc, when the QSO ends press the enter key on the keyboard to automatically record the QSO end time and save the QSO to the log - If automatic upload to the on-line logbooks/QSL systems is selected the QSO will automatically upload.



Award Quick View

The fields listed in the ‘Edit table layout’ menu of most grid views as ‘Reference1’, ‘Reference2’, Association 1 and Association 2 may be used to display award and association references of the user’s choice e.g. SOTA or IOTA references by selection from the drop down lists of awards in the Program Configuration/User preferences menu.

The field titles may be changed/edited in the ‘Edit table layout/Appearance’ menu as described elsewhere.

Award Preferences

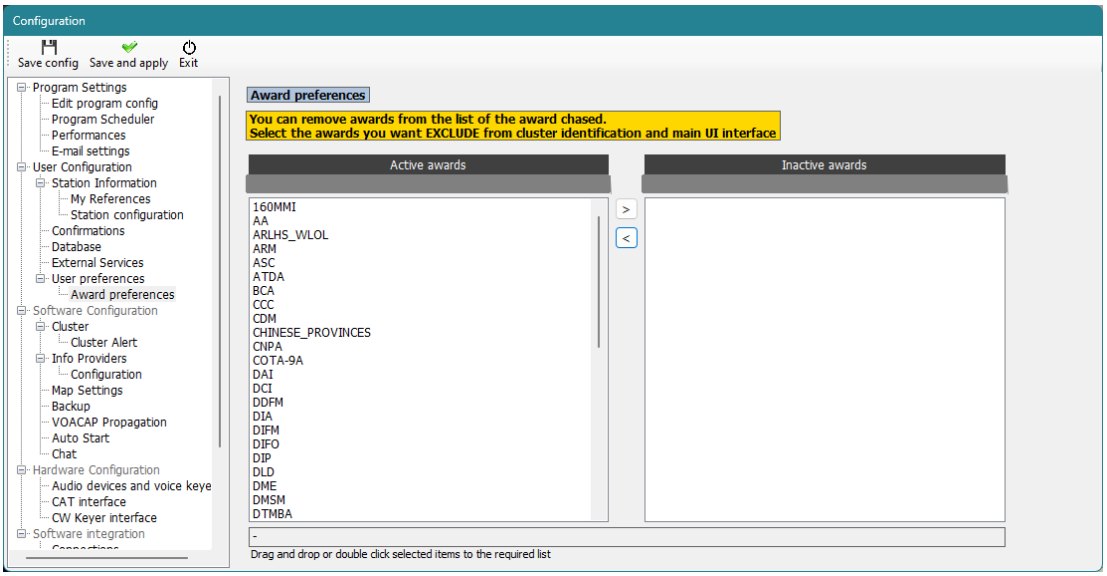
This window enables the user to select the awards of interest, this can save resources because the inactive awards are excluded from the intelligent cluster award identification and the main UI.

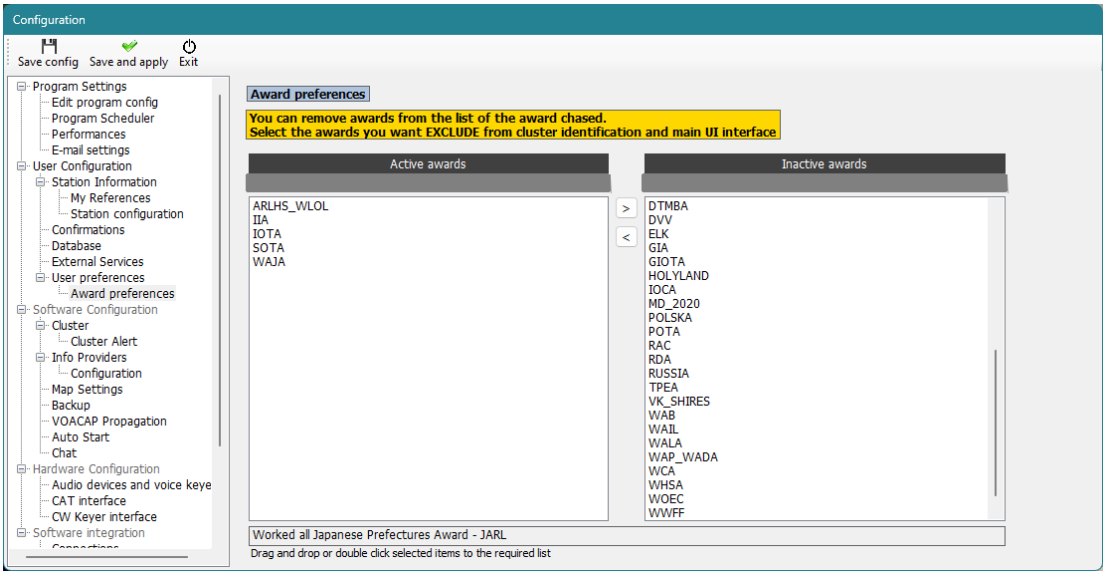
IMPORTANT NOTES

1. DXCC awards will not be affected by changes made in this menu because they are not defined by award references.
2. Moving awards to the ‘Inactive’ area does not remove them from the ‘Award status’ view or ‘Awards manager’ because the user may have historic award data or need to re-activate those inactive awards at some later time.

Clicking the arrows in-between the active and inactive panes will transfer all awards in the direction indicated by the arrow.

Individual awards may be moved to the other pane by double clicking the award name or drag and drop between panes.

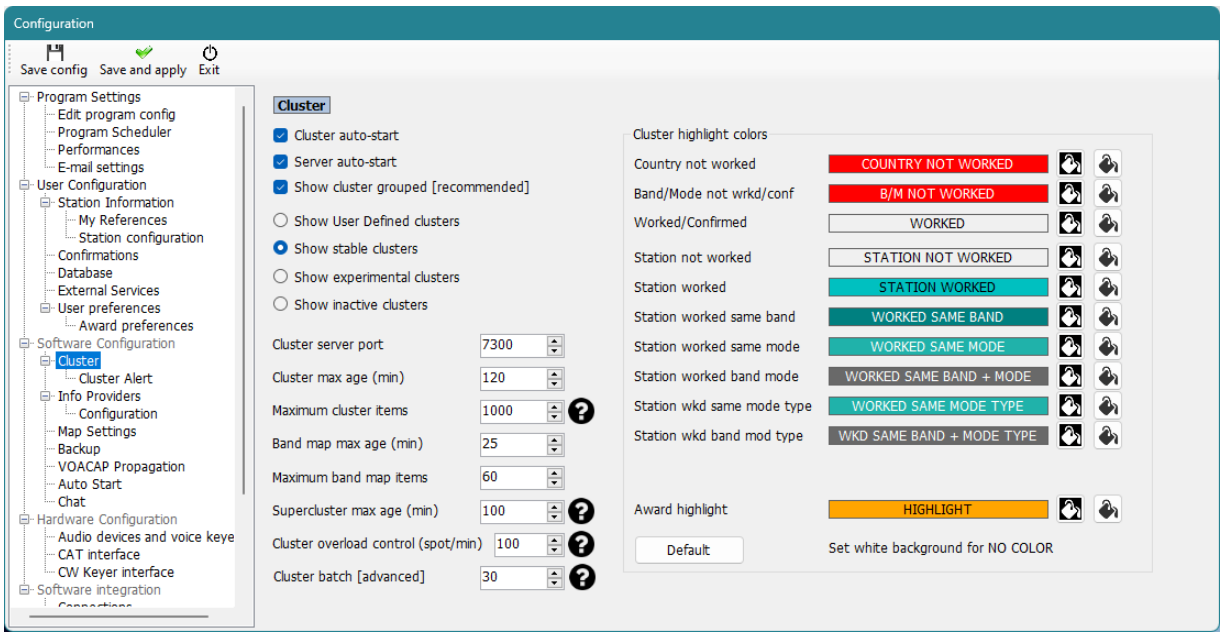


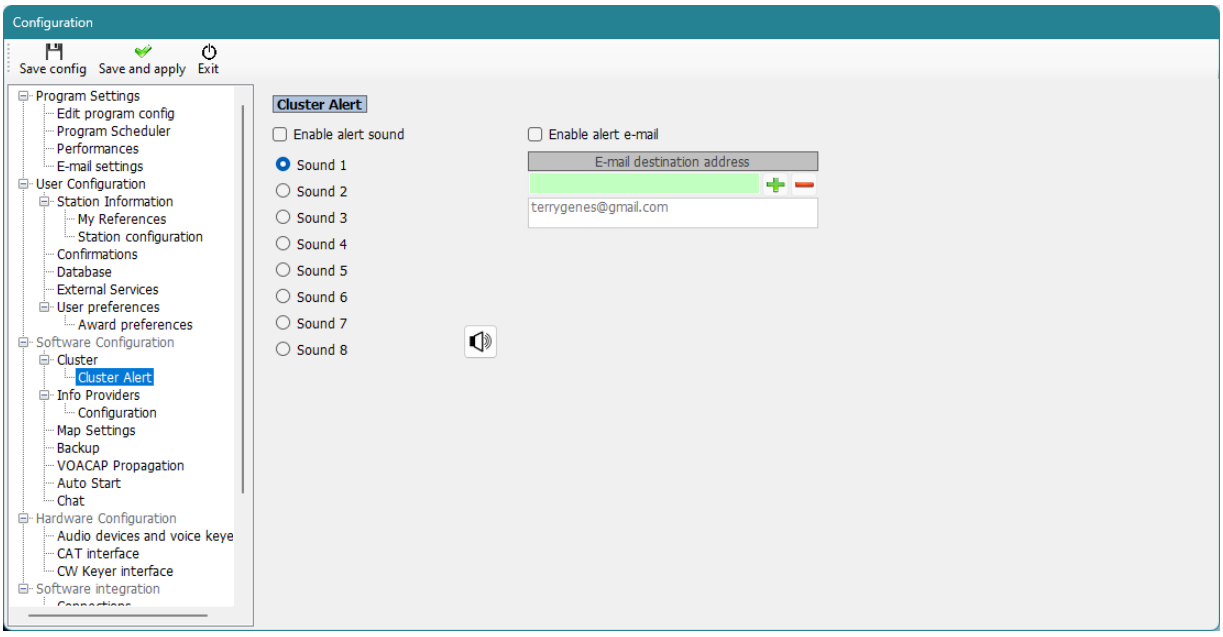


Software Configuration

Cluster

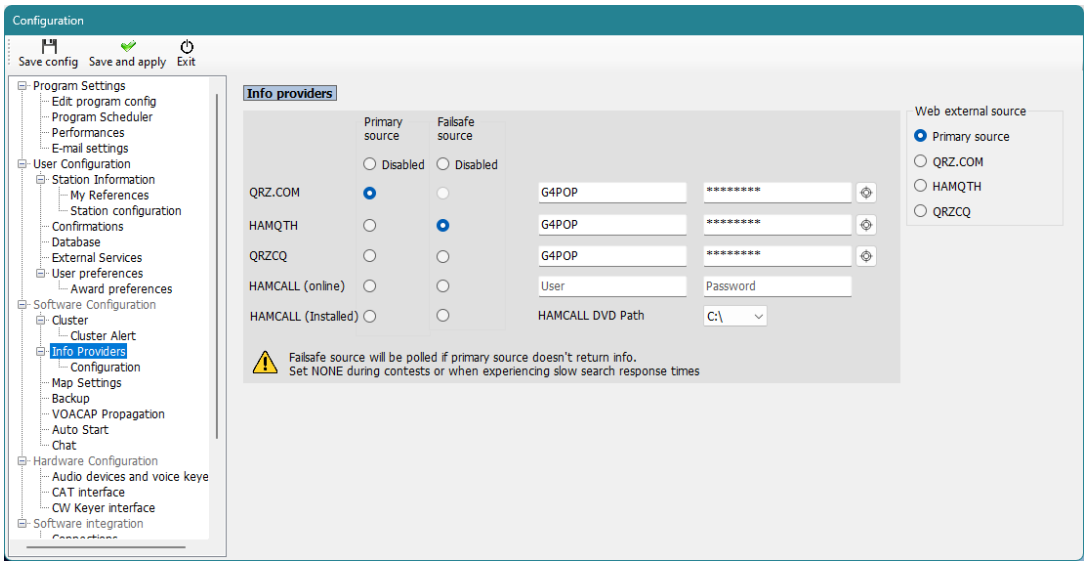
All settings for cluster colours, operation and spot alert sounds and emails


Configuration
Save config
Save and apply
Exit
Program Settings
Edit program config
Program Scheduler
Performances
E-mail settings
User Configuration
Station Information
My References
Station configuration
Confirmations
Database
External Services
User preferences
Award preferences
Software Configuration
Cluster
Cluster Alert
Info Providers
Configuration
Map Settings
Backup
VOACAP Propagation
Auto Start
Chat
Hardware Configuration
Audio devices and voice keye
CAT interface
CW Keyer interface
Software integration
Cluster
Cluster auto-start
Server auto-start
Show cluster grouped [recommended]
Show User Defined clusters
Show stable clusters
Show experimental clusters
Show inactive clusters
Cluster server port 7300
Cluster max age (min) 120
Maximum cluster items 1000
Band map max age (min) 25
Maximum band map items 60
Supercluster max age (min) 100
Cluster overload control (spot/min) 100
Cluster batch [advanced] 30
Cluster highlight colors
Country not worked
COUNTRY NOT WORKED
Band/Mode not wrkd/conf
B/M NOT WORKED
Worked/Confirmed
WORKED
Station not worked
STATION NOT WORKED
Station worked
STATION WORKED
Station worked same band
WORKED SAME BAND
Station worked same mode
WORKED SAME MODE
Station worked band mode
WORKED SAME BAND + MODE
Station wkd same mode type
WORKED SAME MODE TYPE
Station wkd band mod type
WKD SAME BAND + MODE TYPE
Award highlight
HIGHLIGHT
Default
Set white background for NO COLOR


Configuration
Save config
Save and apply
Exit
Program Settings
Edit program config
Program Scheduler
Performances
E-mail settings
User Configuration
Station Information
My References
Station configuration
Confirmations
Database
External Services
User preferences
Award preferences
Software Configuration
Cluster
Cluster Alert
Info Providers
Configuration
Map Settings
Backup
VOACAP Propagation
Auto Start
Chat
Hardware Configuration
Audio devices and voice keye
CAT interface
CW Keyer interface
Software integration
Cluster Alert
Enable alert sound
Sound 1
Sound 2
Sound 3
Sound 4
Sound 5
Sound 6
Sound 7
Sound 8
Enable alert e-mail
E-mail destination address
terrygenes@gmail.com

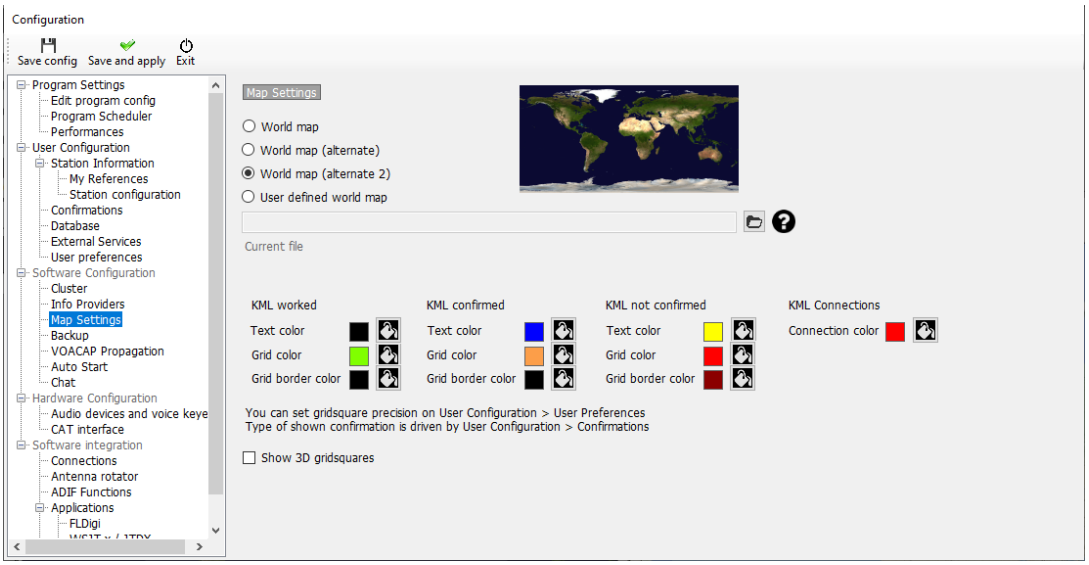
Info Providers

Log4OM V2 is unique in providing online look up facilities with a fail-safe or fall-back option should the prime online lookup provider be offline or not provide data on the call sign being checked. Including lookup from an Installed Hamcall database CD



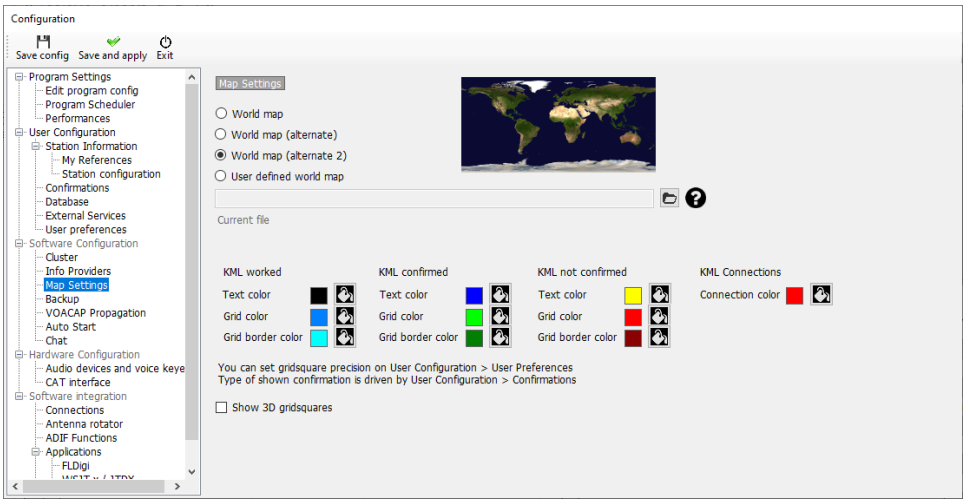
Map settings

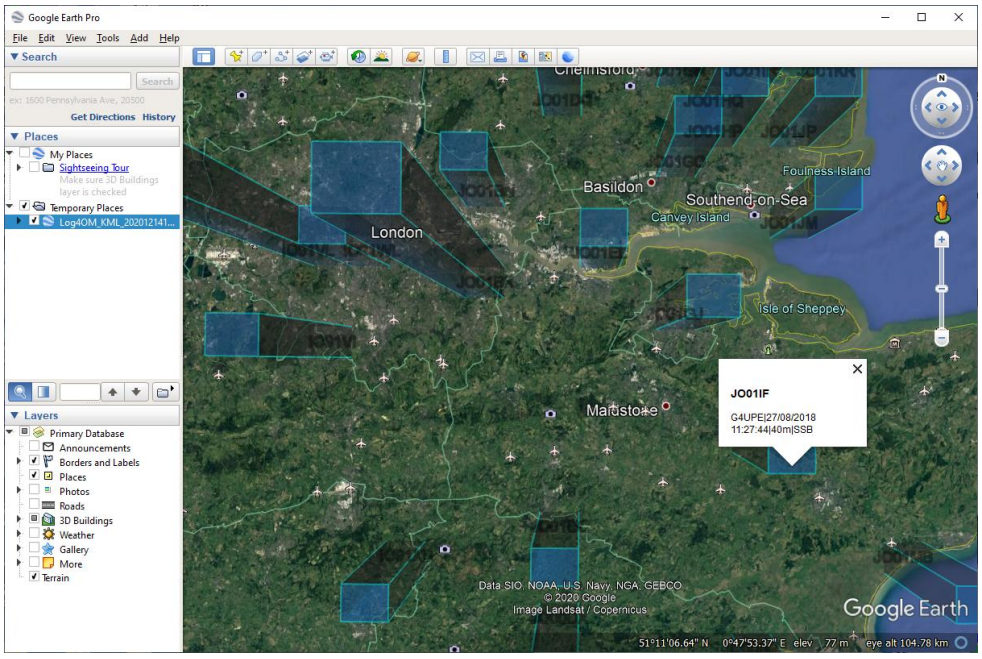
Select a default map display or add a user defined world map.



Changing KML map colours

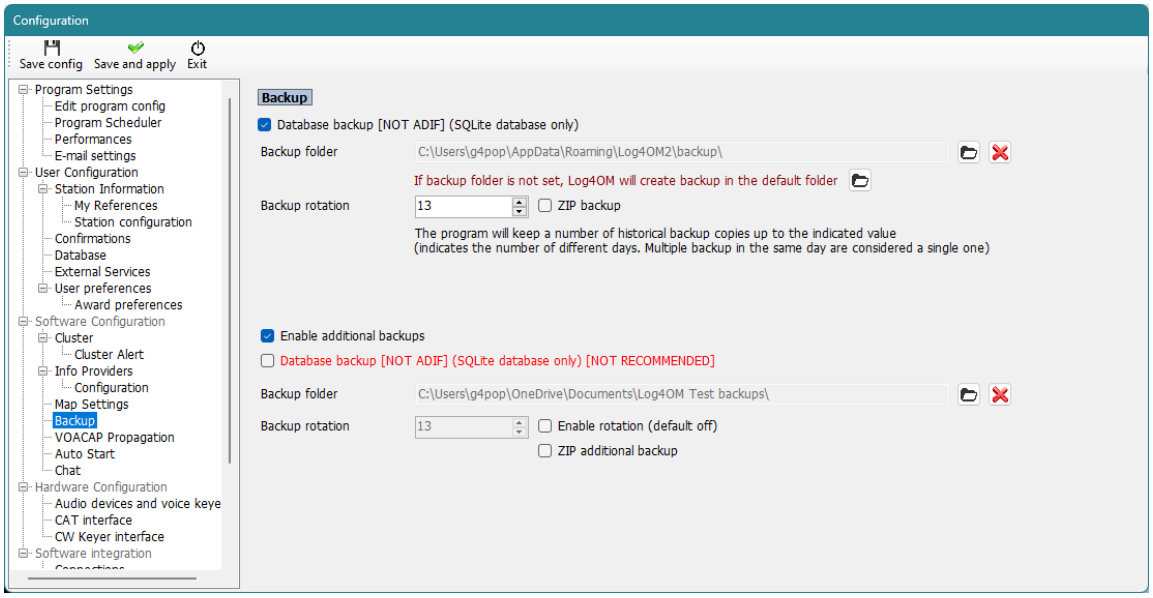
In Settings/Program configuration/Map settings it is possible to configure the colours displayed and select 2D or 3D display.





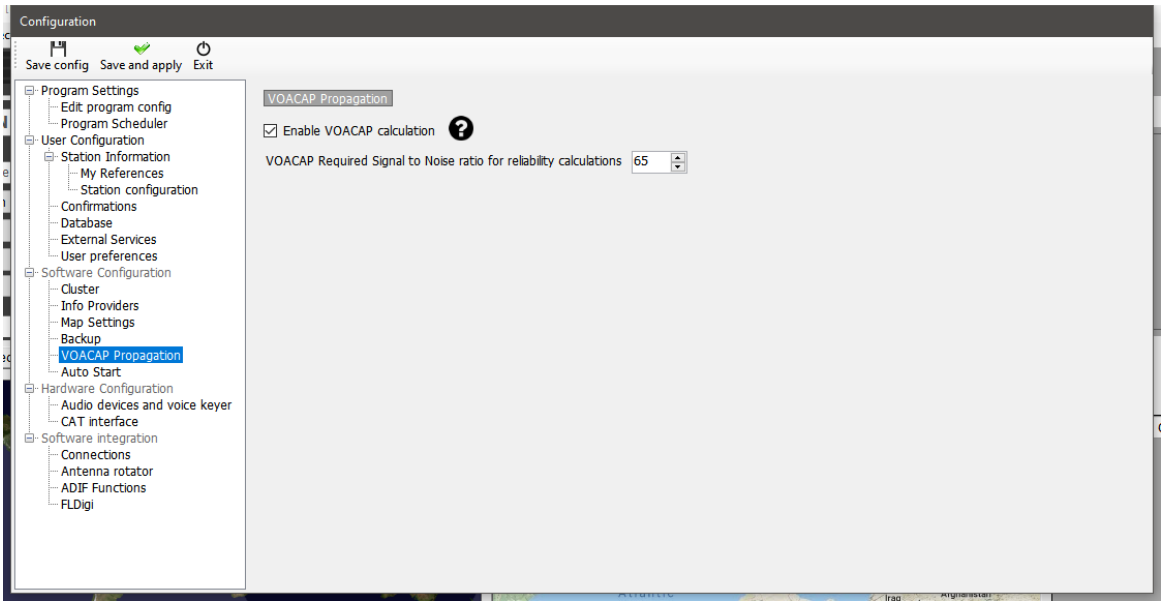
Backup

It is advisable to set automatic backups, preferably in two separate locations e.g. Documents folder on the hard drive and cloud storage like Dropbox or Google Drive for ultimate security of user data.



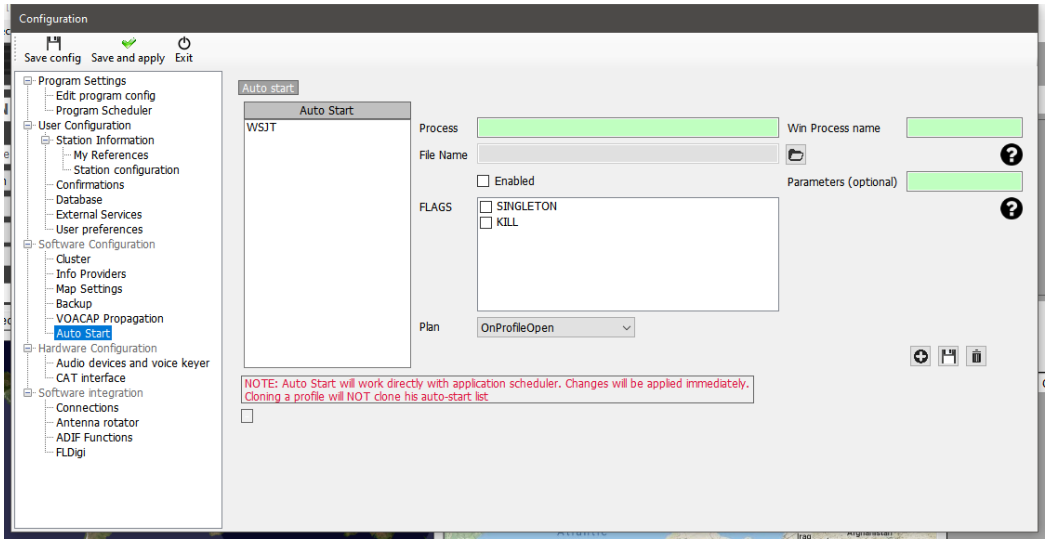
VOACAP Propagation

Enable the powerful propagation tool and the Signal to noise ratio threshold.



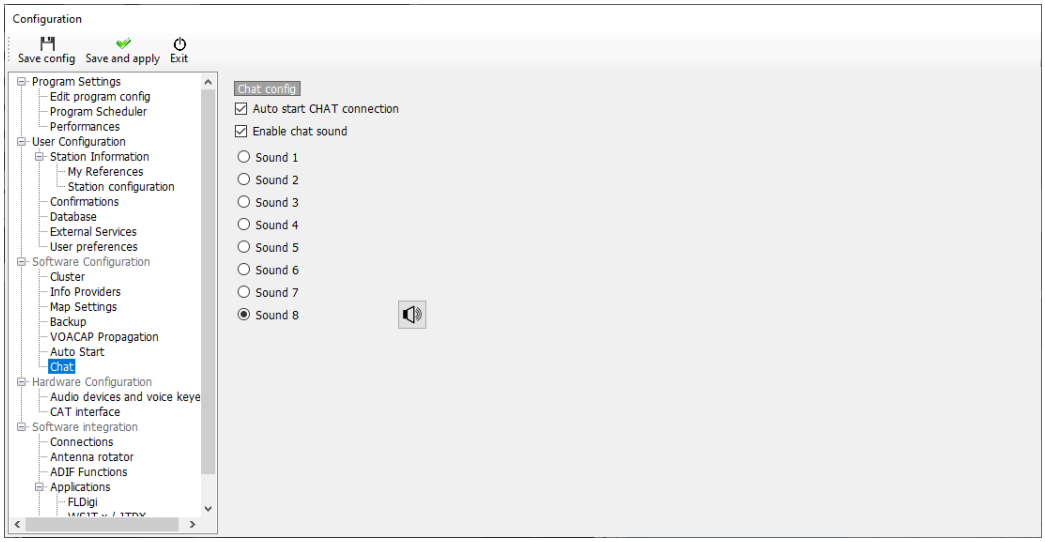
Auto Start

Set integrated programs to automatically start or close and add start-up parameters



Chat configuration

The Log4OM ‘Chat’ system can be enabled and audio alerts selected in the ‘Chat’ menu

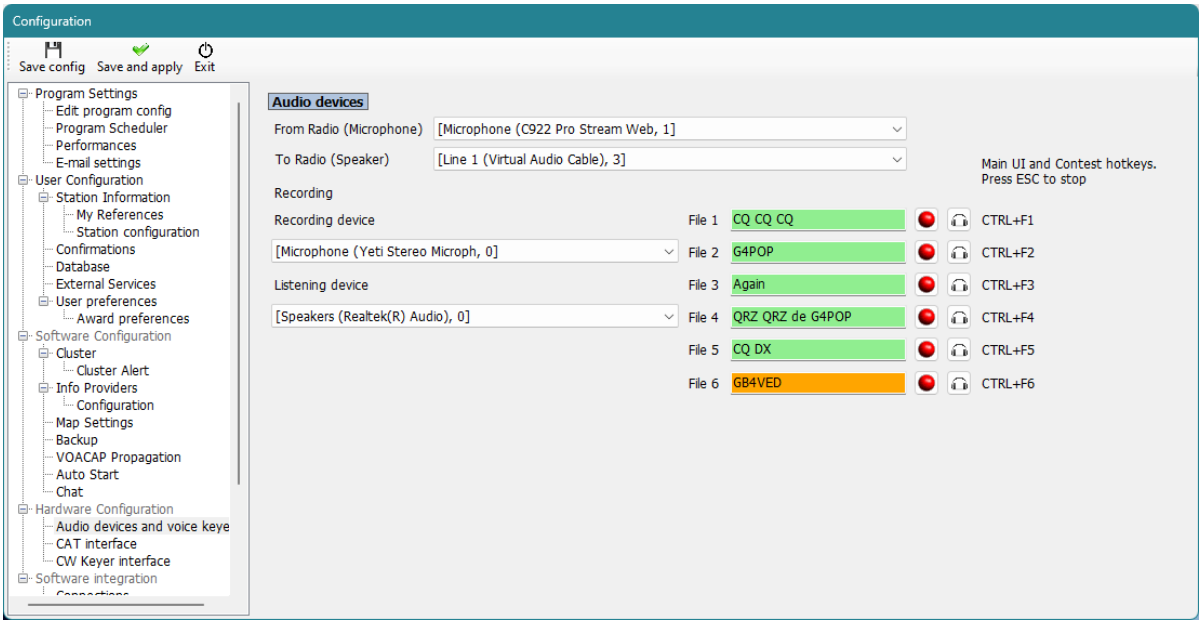


Hardware Configuration

Audio devices and Voice Keyer

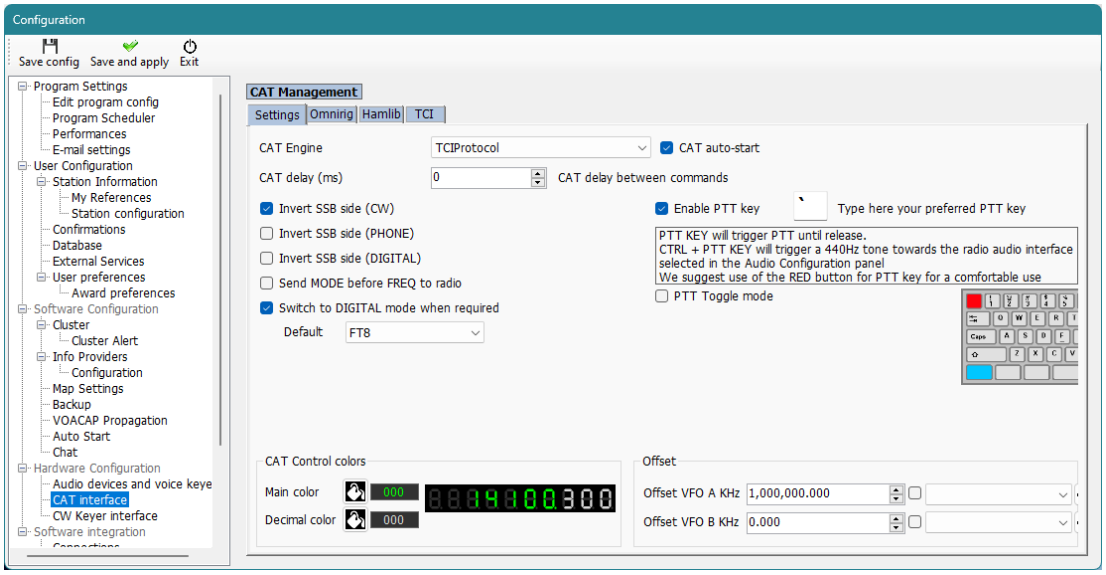
Log4OM provides a voice keyer facility which has six memories

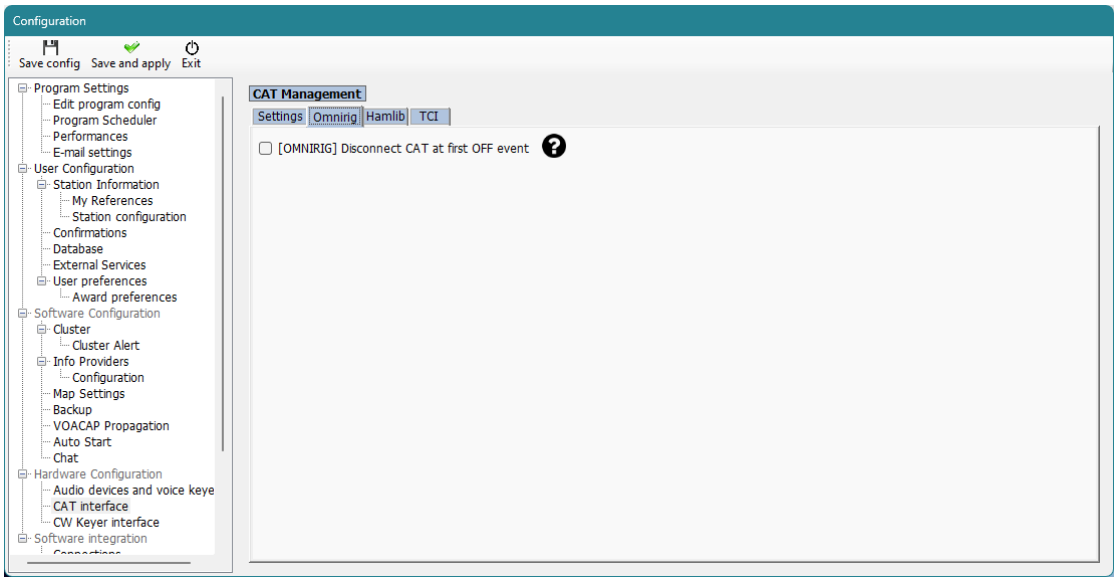
1. Select the devices to be used for the transmission of the keyer messages in the ‘From Radio and To Radio’ drop down menu’s
2. Choose the recording and Listening devices under ‘Recording’
3. Provide a ‘File name’ for each memory.
   Note: Until a recording is completed the file name box will be highlighted Orange.
4. Hold down the red button to the right of a memory and record a message using a microphone connected to the computer – At the end of the recording release the record button.
   Note: The file name box will change to green to indicate that it contains a message.
5. Click on the headphone symbol to the right of the recording button to playback the recording for that memory.

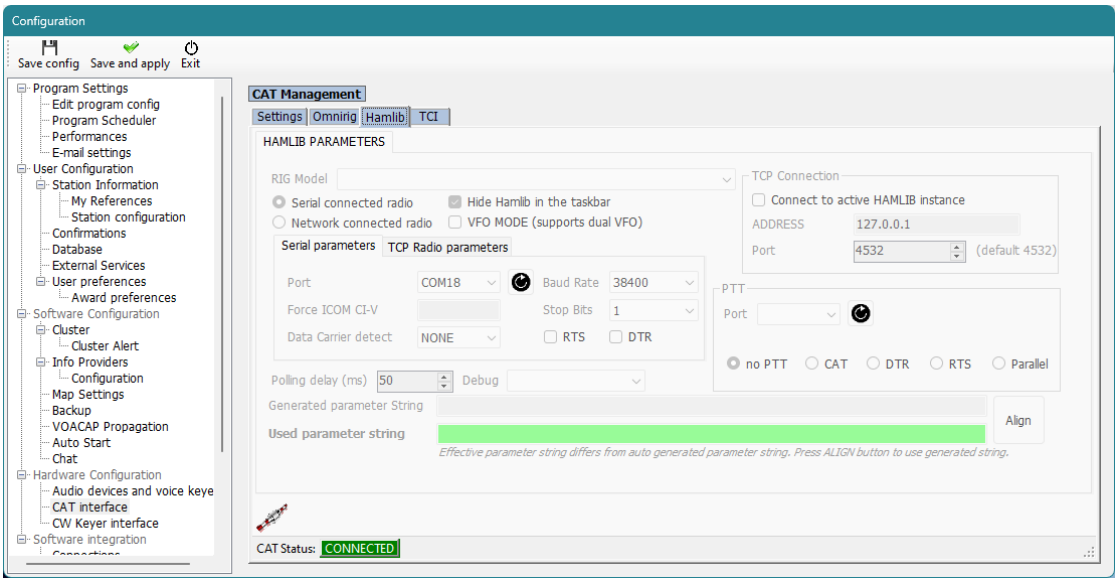


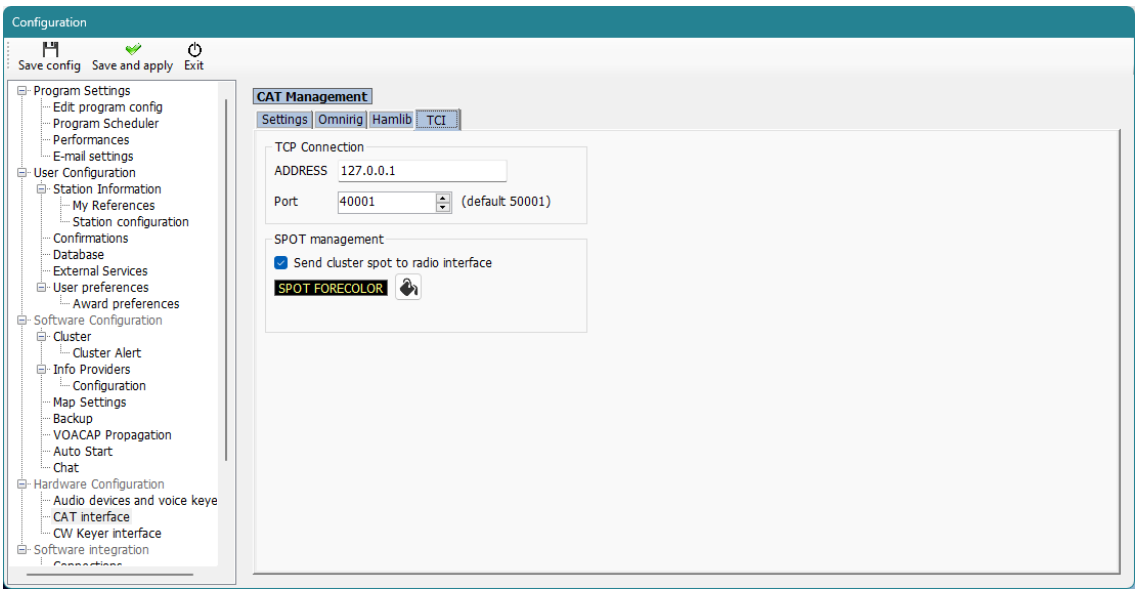
CAT interface

The CAT interface provides a choice of radio control either via Hamlib, Omnirig or TCI



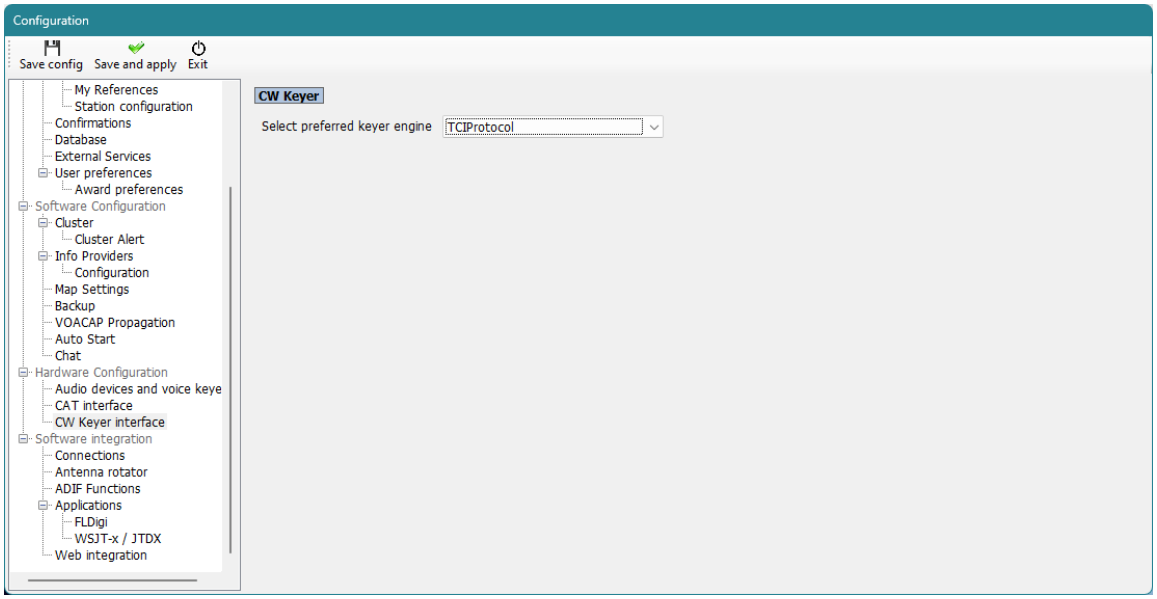






CW Keyer Interface

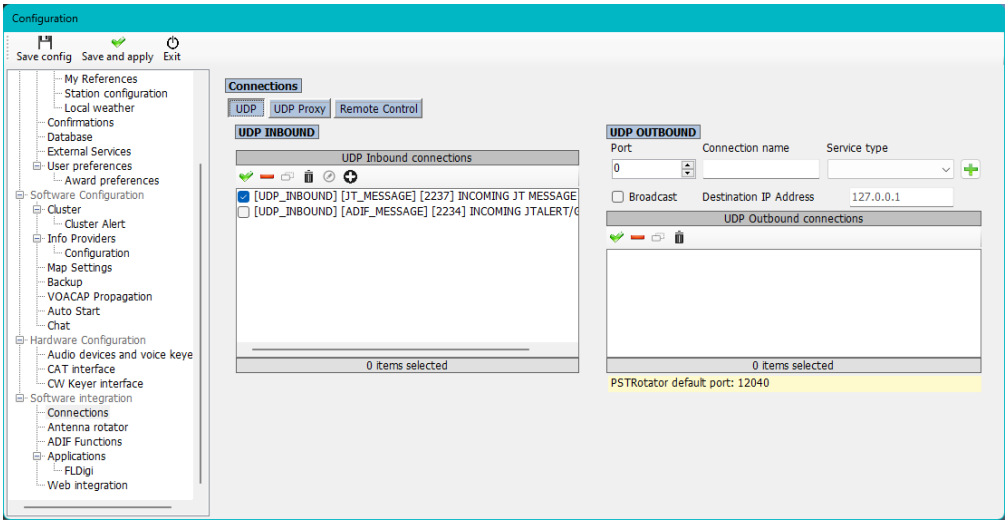
This configures the type of keyer to be used, Nothing, Winkeyer or TCI Protocol (See separate section for Winkeyer and TCI)

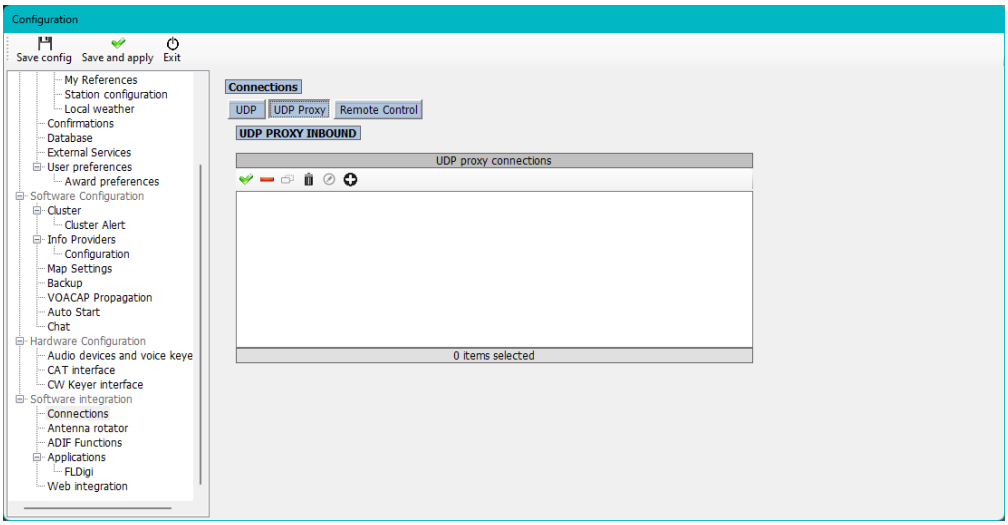


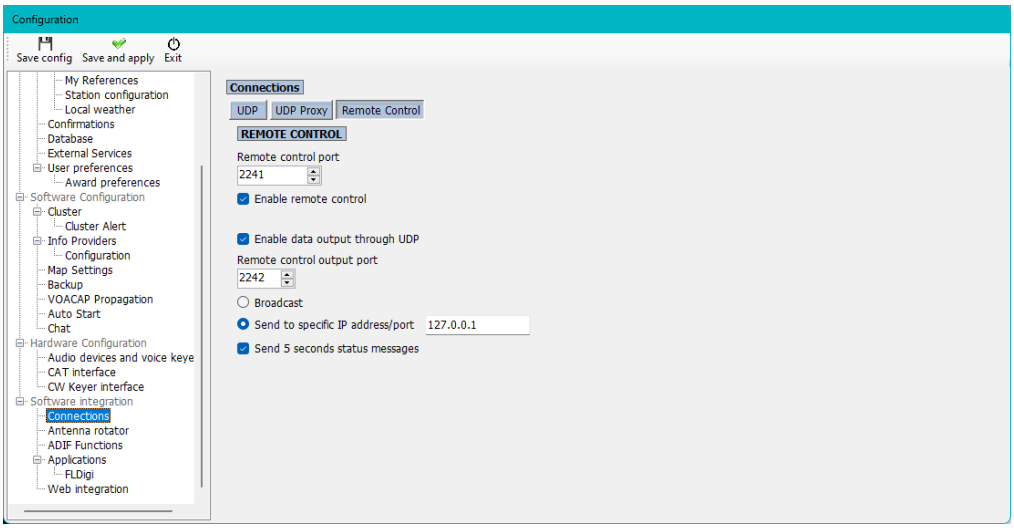
Software Integration

Connections

The connections tab provides three types of connection, UDP Inbound/Outbound (For integration with other software), UDP Proxy (Relay of data messages) & Remote control to enable software control via the internet. See the relevant sections of this user guide for further details.

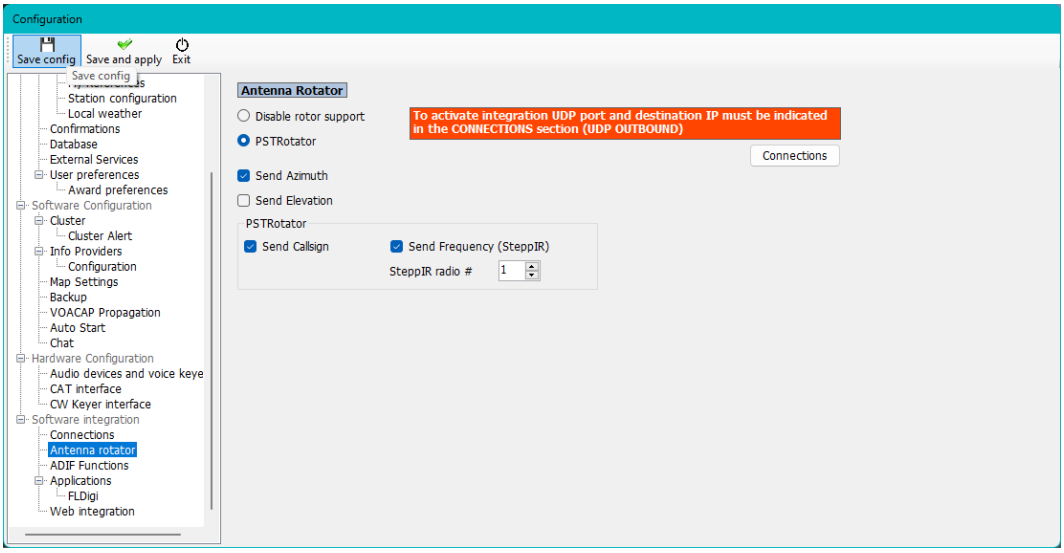






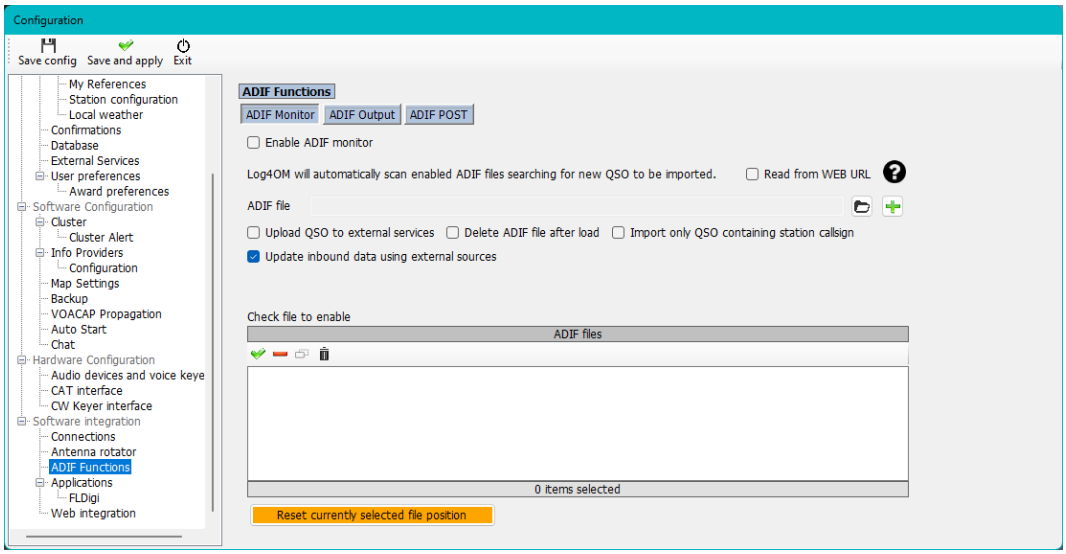
Antenna rotator

This menu provides the user to enable and configure the interface with PSTRotator and StepIR control



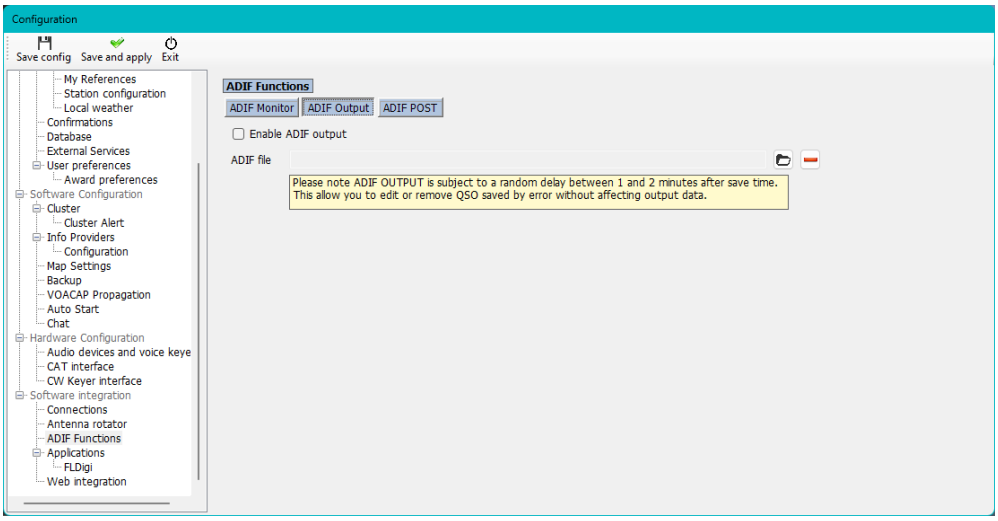
ADIF Functions

ADIF Monitor to automatically scan ADIF files searching for QSO's to automatically add to the Log4OM Logbook.

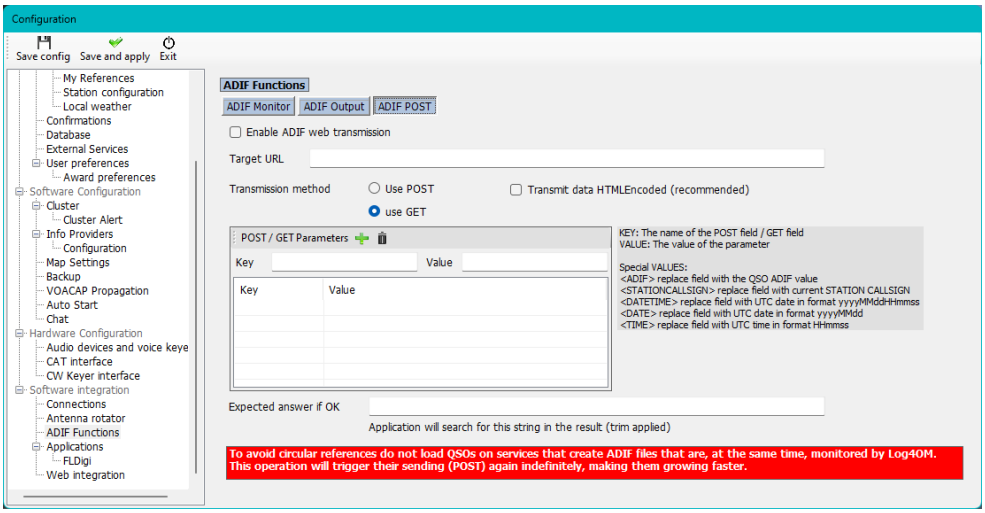


NOTE QSO's are not uploaded to the online logbooks like QRZ, Hamlog etc during ADIF monitor import

ADIF output broadcast ADIF information for use by other software.

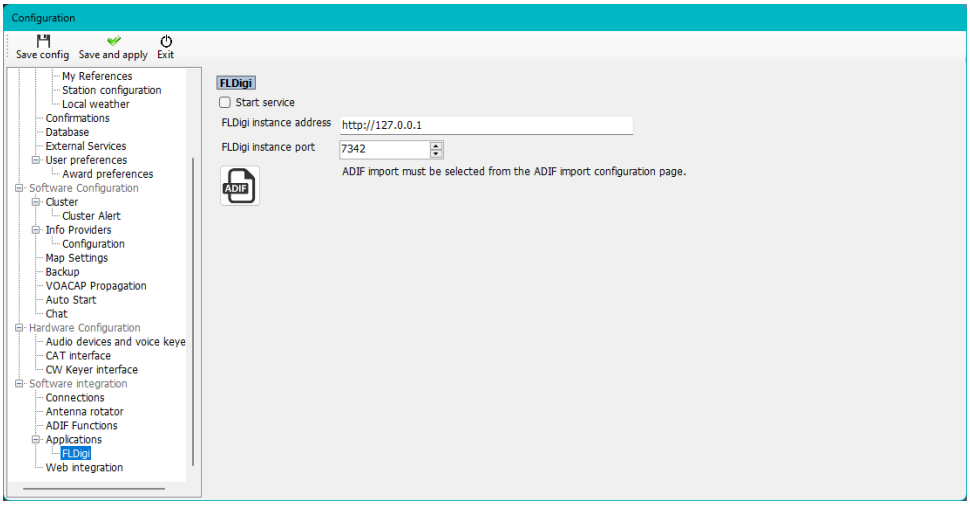


ADIF POST will 'Post' or 'Get' QSO data to/from a website

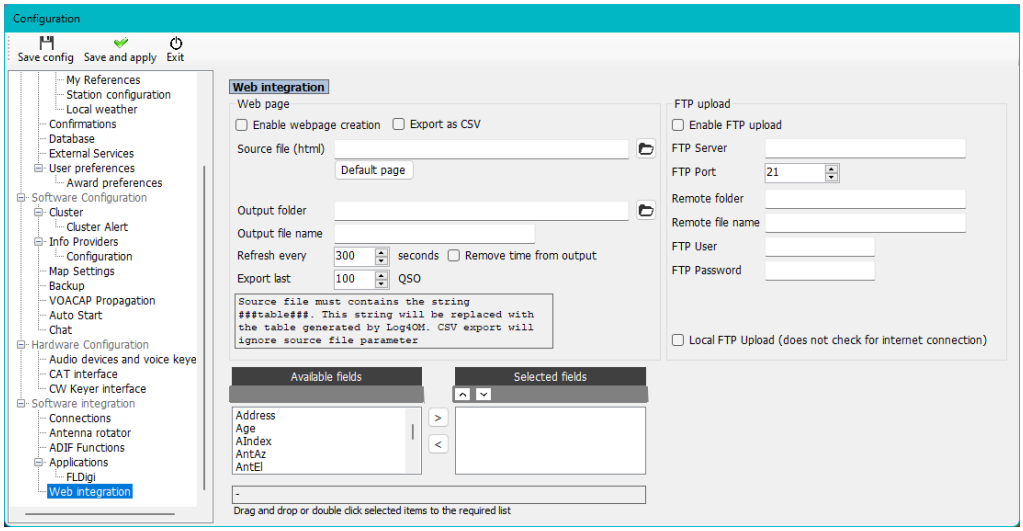


Applications

FLDigi provided communication between FLDigi and Log4OM



Web integration enables webpage creation and FTP upload



Integration with external programs

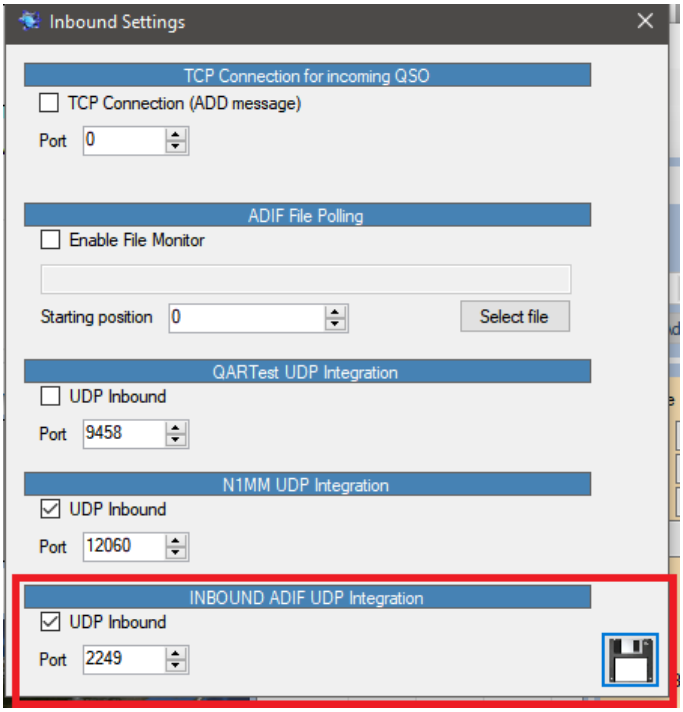
Log4OM will integrate (Connect to) many external programs via UDP or TCP connections for receiving data (Inbound) and broadcasting data (Outbound) using the Settings/Program Configuration/Software integration/connections tab.

Logging automatically to Log4OM version 1

The powerful UDP support in Log4OM enables a user of version 2 to have the program automatically add QSO's being logged to the version 1 logbook.

In version 1 follow the following steps:

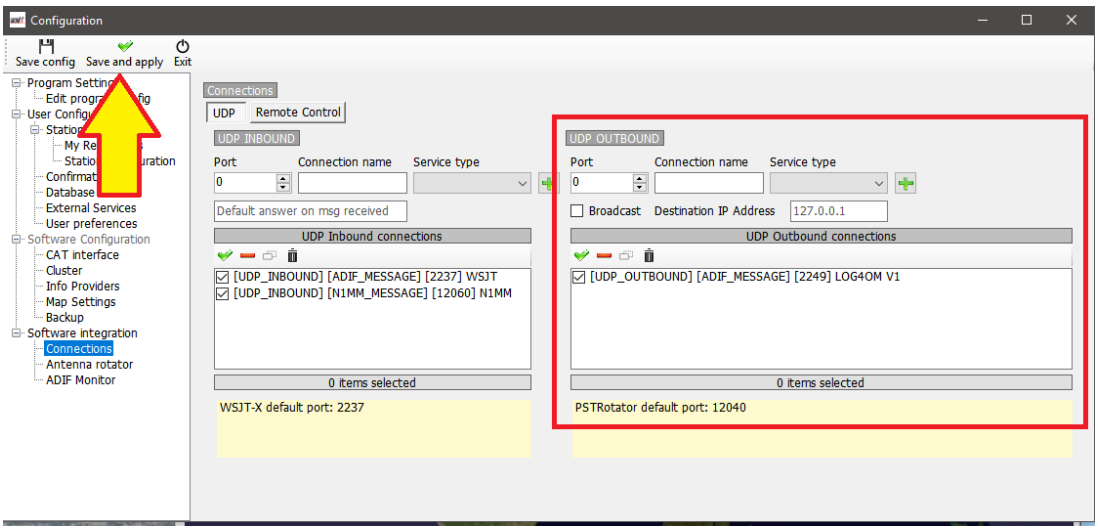
1. Open the communicator and click the Red stop button
2. Go to the Communicator 'Settings/inbound/inbound settings menu
3. Check the check box at the bottom marked UDP Inbound under 'Inbound ADIF UDP Integration' and enter Port number 2249 (See below)



4. Click the floppy disk 'Save' button and close the Inbound settings window.
5. Restart the communicator by clicking the Green 'Start' button.
6. **Minimise the Communicator - Do not close it**

In version 2 follow the following steps:

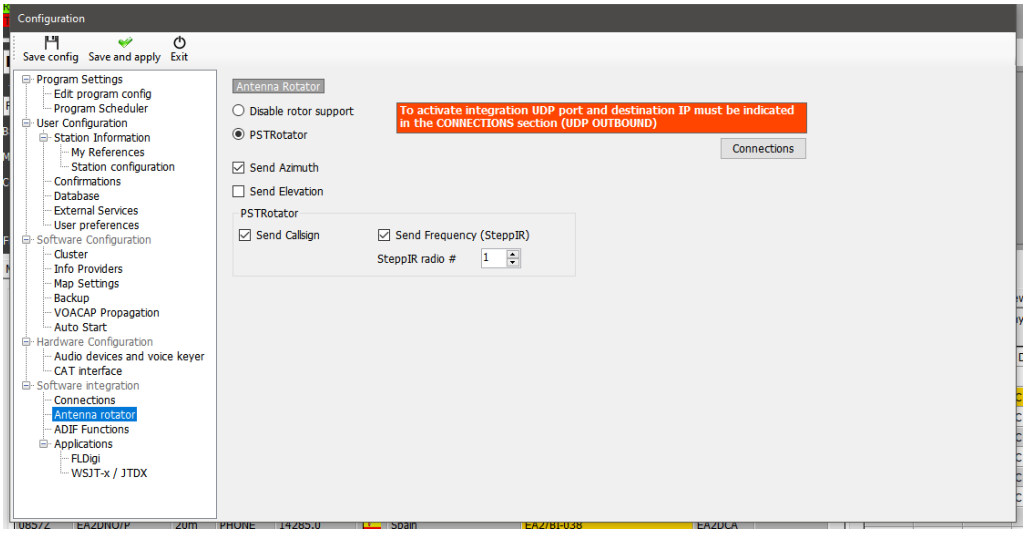
1. Open the 'Settings/Program configuration/software integration/connections' menu
2. In the UDP Outbound fields - Enter port number 2249 - Enter the 'Connection name' Log4OM V1 - Select 'ADIF Message' from the Service type drop down menu.
3. Click on the Green + sign to add the connection to the list box below - Ensure the service check box is checked! as in the image below.
4. Click 'Save and Apply'
5. Close and reopen both versions of Log4OM

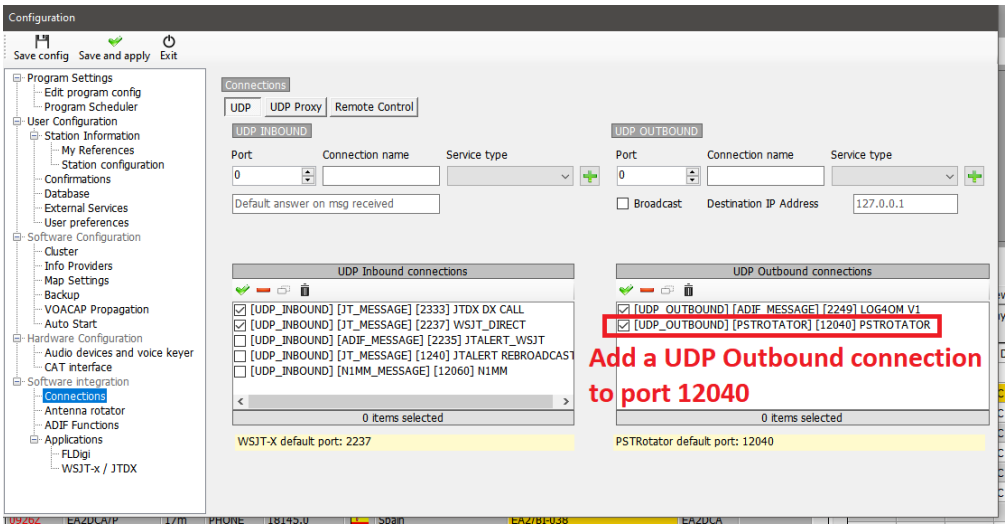


Now QSO's logged in Log4OM Version 2 whether by manual entry in Log4OM Version 2 or automatically logged from an external program connected to Log4OM version 2 e.g. WSJT, JTAlert, FLDigi, N1MM etc will also be automatically logged to version 1, providing Version 1 is running.

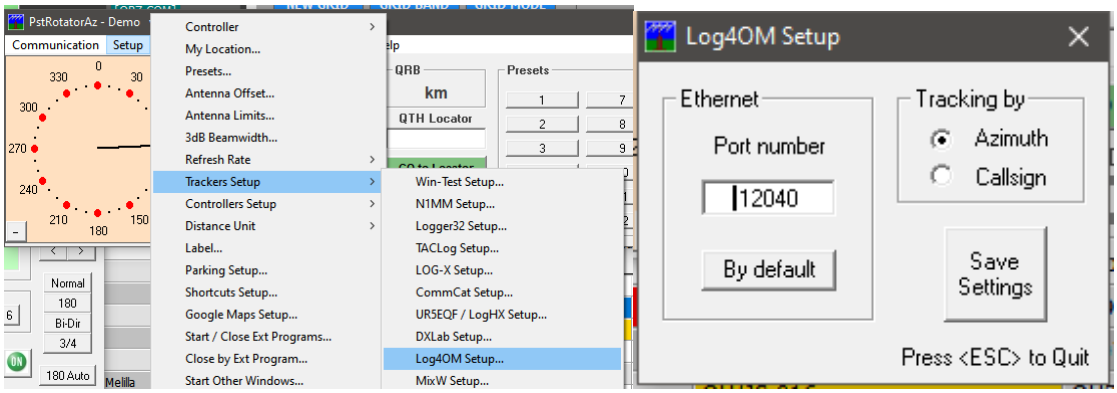
Antenna rotator & StepIR

Control of rotators via PSTrotator for Azimuth plus StepIR antenna setting as below



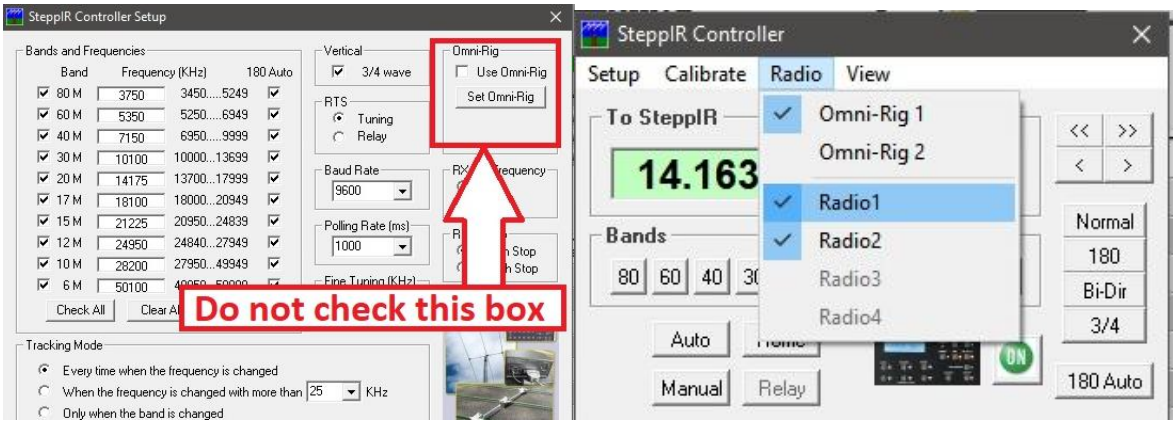


In PSTrotator ensure that Log4OM is selected in the ‘Tracker’ menu and that in the ‘Setup’ menu that the Ethernet port number is set to 12040 to match the UDP outgoing message port – click ‘SAVE Settings’



Open the StepIR controller from the PSTrotator ‘Setup’ menu and select setup – Ensure the ‘Use Omnirig’ check box is not checked.

Open the StepIR ‘Radio’ menu and check both ‘Radio 1 and Radio 2, this will enable the StepIR controller to follow whichever radio is selected in Log4OM

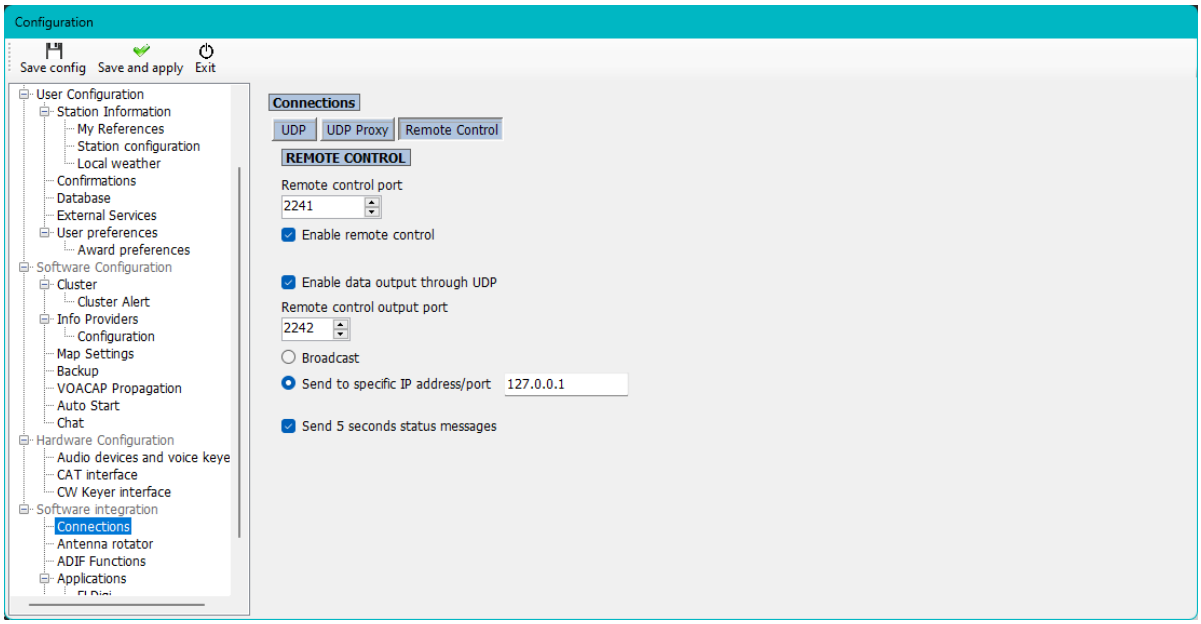


UDP control of Amplifiers and Tuners

Modern amplifiers and some tuners/matching units (ATU/AMU) can synchronise band and mode settings by UDP connection e.g. RF Kits amplifiers.

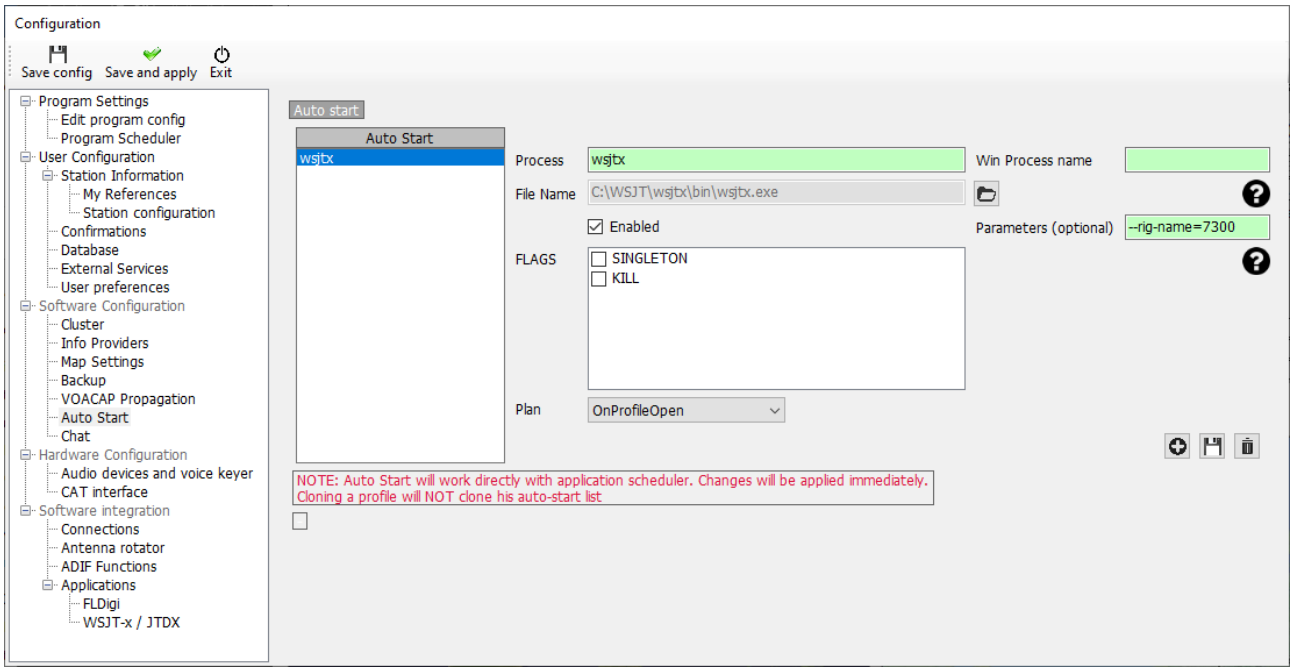
Provision for this is included in Log4OM in the settings/Program Configuration/Connections menu (Third tab marked 'Remote control')

- Select Enable data output through UDP'
- Enter the required port number
- Either select 'Broadcast' or 'Send to specific IP address' and enter the IP address of the hardware.
- If required check 'Send 5 second status messages'
- Click 'Save and apply'



Auto Start of external programs

It is possible to select which other programs will be started when Log4OM is started from the Program Configuration/Auto start tab.



- Provide a process name
- Browse to the start exe for that program by clicking the folder icon to the right of the file name field
- Add any start up parameters required
- Click 'Enable'
- Click the floppy disk save icon followed by the + button to add it to the auto start list
- Click Save and exit

Parameters

Extra windows processes and parameters may be included e.g. Multiple instances of some software require parameters to identify which radio to start or possibly to be started minimised.

The field marked Parameters (Optional) is provided for this purpose, the required parameters will vary according to the software being started.

Flags

- Singleton ensures that only one instance of the target program is started.
- Kill closes a program that already is running

Configuring Log4OM with Slice Master and Flexradio SmartSDR

By Dale Southard - AE6DS

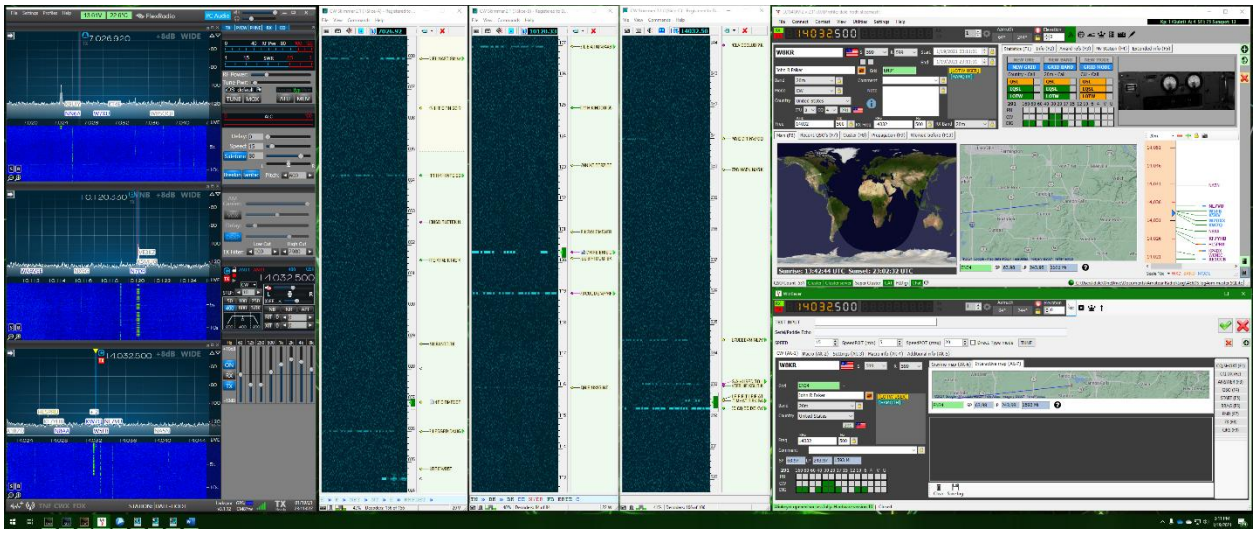
Why use Slice Master

Log4OM can control most radios using Hamlib or Omnirig CAT commands. This includes the FlexRadio 6000 series radios which can be controlled in a traditional fashion using the virtual serial ports provided by the FlexRadio SmartCAT software without using any additional third-party programs.

Adding Slice Master provides some additional features that are not otherwise available in Log4OM:

- Simultaneous use of multiple slice receivers
- Simultaneous use of multiple CW Skimmer/FLDigi/WSJT-X instances on multiple bands
- Simultaneous control from SmartSDR, Log4OM, and CW Skimmer/FLDigi/WSJT-X
- Display of Log4OM cluster spots directly on SmartSDR Panadapters

While not for everyone, many operators may desire one or more of the above features. As an example, below is an image of a Flex 6600 running SmartSDR listening on 40m, 30m, and 20m bands with CW Skimmer monitoring all three bands and Log4OM feeding cluster spots into all three panadapter's and controlling the built in keyer on the TX band (currently 20m).



Installing Slice Master 6000 for CAT

Slice Master 6000 is written by Donald Beaudry (K1DBO) and is available on GitHub:

https://github.com/K1DBO/slice-master-6000

The application can be downloaded from

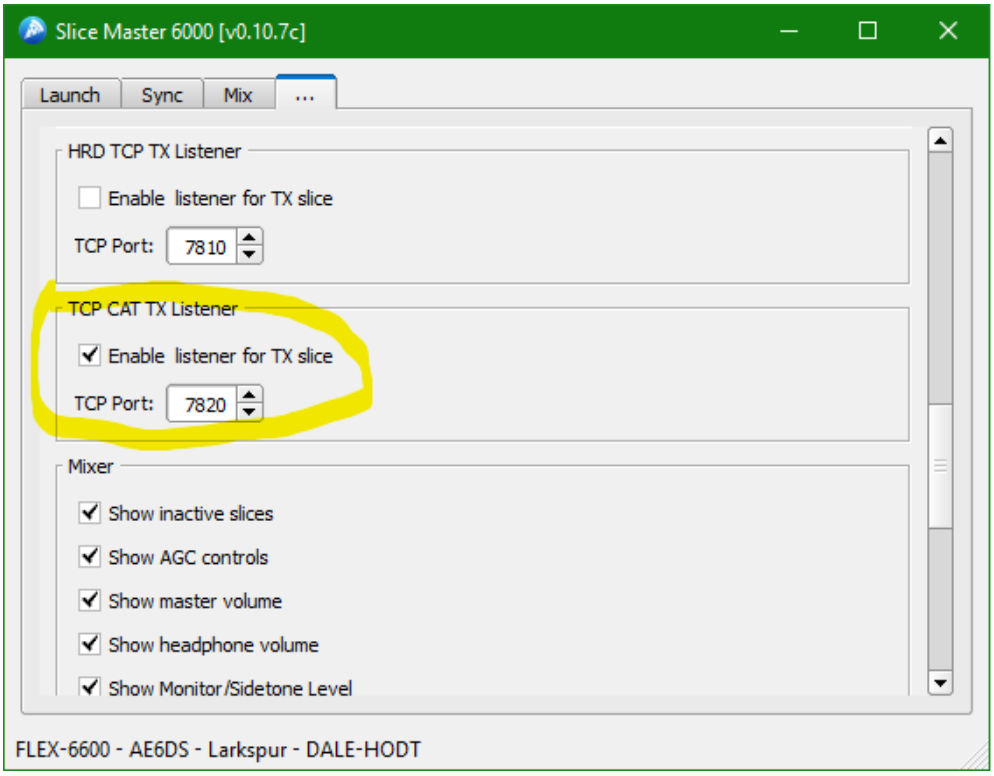
https://github.com/K1DBO/slice-master-6000/releases

and installed as any other Windows application.

Configuring Slice Master for TX Following

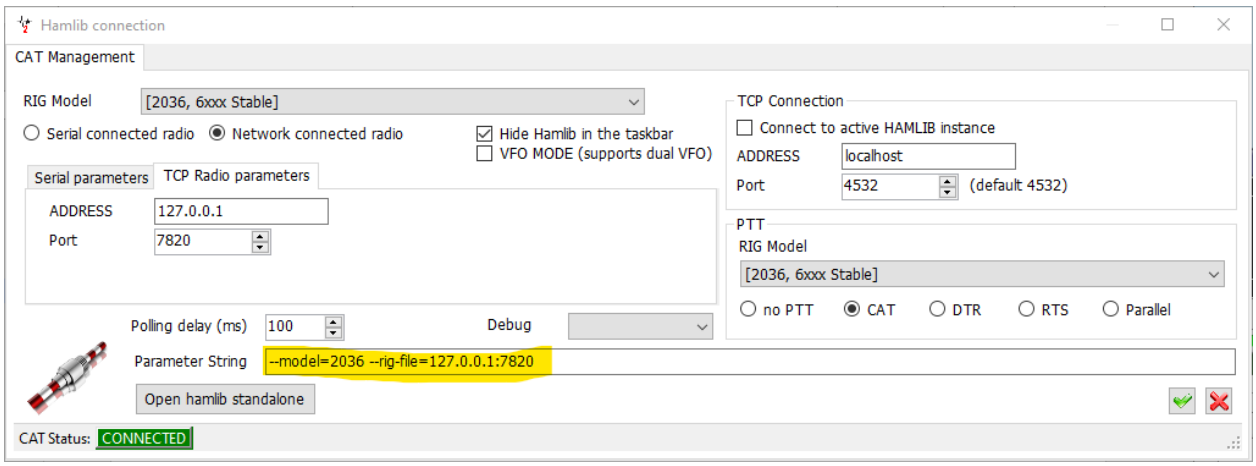
Once installed the most important configuration setting for use with Log4OM is the CAT TX Listener. This feature provides a TCP CAT port that follows whichever slice is currently marked as the TX slice. This means than any CAT commands from Log4OM will affect the TX slice, and that changes to the TX slice will be noticed by Log4OM. By changing which slice is TX, operators can comfortably work with multiple (two, four, eight) independent receivers on multiple bands while still using the Log4OM interface for whichever receiver is transmitting in a QSO.

In Slice Master 6000 the TCP CAT TX Listener is configured in the **…** tab. For this example, I have enabled the listener and set it's output to TCP Port 7820



Configuring Log4OM to use Slice Master for CAT

In Log4OM the CAT system should then be configured to connect to that TCP port using Hamlib. This can be done by first setting the CAT Engine to Hamlib in **Settings->Program Configuration->CAT** and then opening **Connect->CAT->Show CAT Interface** to configure Hamlib. The correct configuration is shown below including the necessary parameter string --model=2036 --rig-file=127.0.0.1:7820 -v



If desired, the startup of Slice Master 6000 can also be automated in the Log4OM via **Settings->Program Configuration->Auto Start.** Not that due to a long start time, even though Slice Master can be auto started you will still have to connect to it explicitly by selecting **Connect->CAT->Start CAT** each time Log4OM is started.

Once configured, all CAT commands between Log4OM and SmartSDR are brokered by Slice Master. There is no need to configure Omnirig, and in fact I set Omnirig's radio to none (to prevent conflicts) and no need to run applications as Administrator. Slice Master also handles CW Skimmer directly so IQ and CAT information from skimmer instances works in both directions. That means clicking a spot in a CW Skimmer instance marks tunes the appropriate slice receiver and marks it as TX so that the CAT info is fed to Log4OM.

Configuring Log4OM to use Flex SmartCAT keyer

To use the built-in Flexradio keyer, configure it for a virtual port in SmartCAT, then configure Log4OM to use the same port. The Flexradio keyer automatically targets whichever slice is marked TX and Log4OM is now targeting that same slice for CAT via Slice Master

Configuring CAT for Digi Programs

For Digi programs like FLDigi and WSJT-X, CAT can be configured to go through SmartCAT via the virtual serial ports or TCP ports that SmartCAT provides. SmartCAT can associate both a TCP port and virtual serial port to each slice. This has the added advantage that digital programs don't need to set TX focus, so you can run a digital program on one or more slices while Log4OM manages the TX slice flagged in SmartSDR.

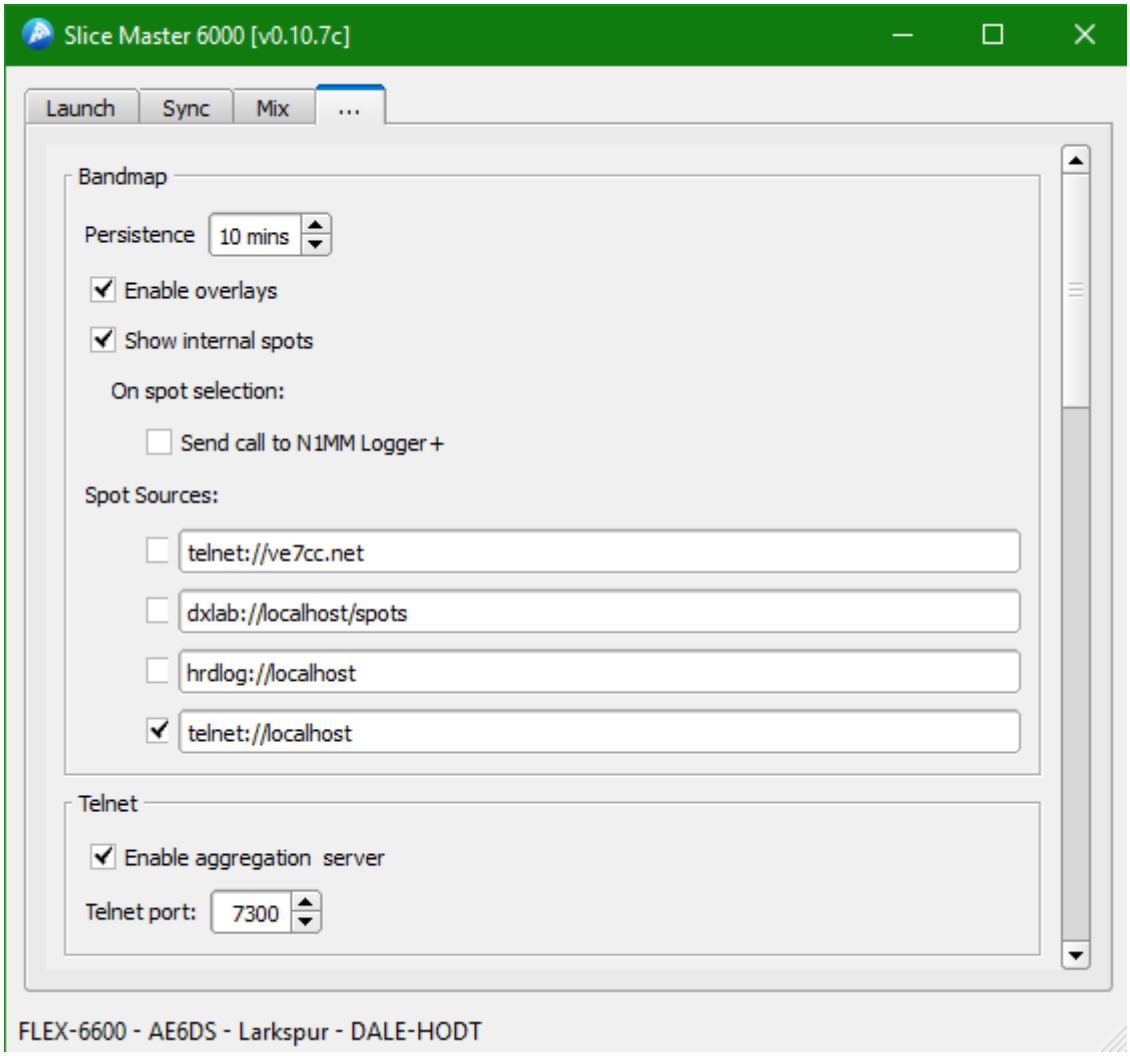
Alternately, digital programs started through Slice Master will be automatically configured to use Slice Master as the broker for CAT. No configuration is necessary and running SmartCAT is not required.

In either case, the LOG4OM FLDigi service (Settings->Configuration->Applications->FLDigi) is not required. FLDigi can be logged via ADIF functions in Log4OM by following the files in \temp\log.adif for each instance, allowing simultaneous use of multiple FLDigi programs on different slices.

Displaying Log4OM Spots in Flex Panadapter's

Slice Master 6000 both aggregates spots from CW Skimmer and can display spotting info directly in the Panadapter's. To enable this Slice Master should be configured to use Log4OM as a source of spots by adding telnet://localhost as a spot source in the band map section of the **…** tab. For completeness, we can also export the skimmer spots from Slice Master by enabling the Telnet Aggregation Server in the … tab and then configuring Log4OM to use the same port as a server on localhost. Both these settings are show below.

And because we have already configured CAT to work through Slice Master, clicking a spot in SmartSDR, Skimmer, or Log4OM will tune as expected. [Note that Log4OM CAT commands to are sent to the TX slice, so that may result in a band change rather than moving the TX flag. Alternately, operators can switch a different slice to TX in SmartSDR.]



Do Not Use Slice Master and OmniRig Simultaneously

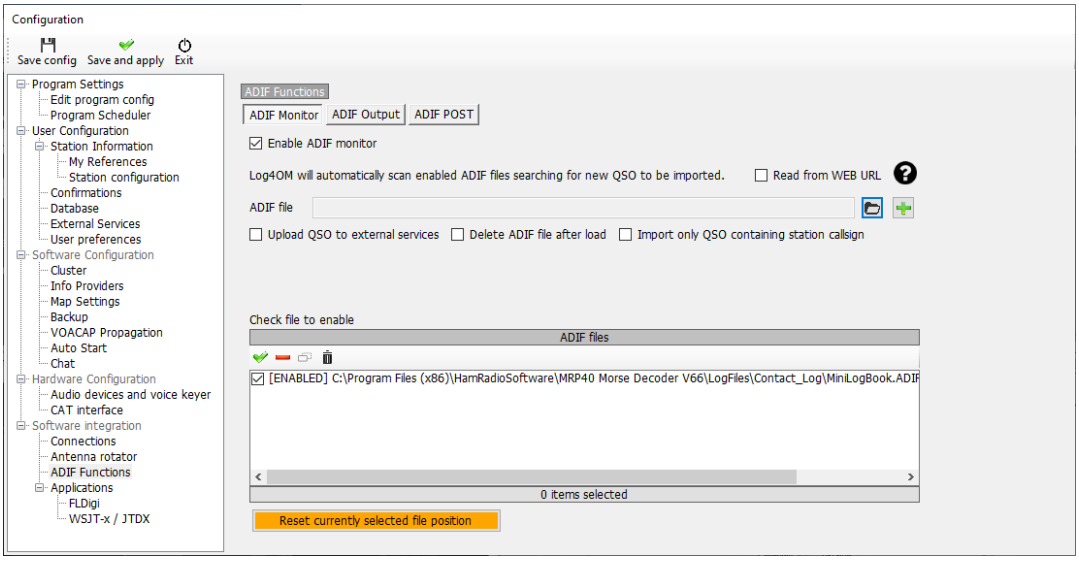
Though Slice Master offers several advantages, some operators may prefer not to use it. As is documented elsewhere, Log4OM can be configured to use OmniRig as for rig control. OmniRig can interface to the FlexRadio SmartCAT software via serial ports – one port for each slice receiver. OmniRig will treat the serial ports as separate radio's and will be limited to controlling two slices.

Because OmniRig is started automatically by some programs, it is important not to have both OmniRig and Slice Master configured at the same time. If you elect to use Slice Master, you should change the OmniRig settings to point at unused Serial ports or radios set to None to prevent unwanted CAT commands being sent to the radio. If you are manually configuring programs to for CAT while running Slice Master, you should use either Hamlib or Rigcat within those applications, not Omnirig.

MRP40 CW Program integration

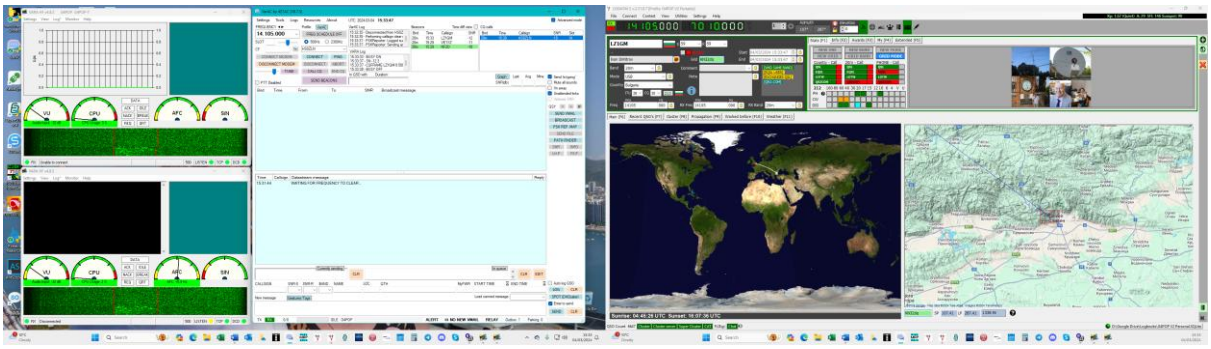
Although direct integration for CAT and lookup facilities are not available in MRP40 it is possible for Log4OM to harvest QSO's from the MRP40 logbook ADIF file using the Log4OM ADIF monitor facility.

1. In Log4OM navigate to the settings/program configuration/ADIF Functions tab
2. Select ADIF Monitor and check the box 'Enable ADIF monitor
3. Navigate to the MRP40 MiniLogbook.ADIF file at C:\Program Files (x86)\HamRadioSoftware\MRP40 Morse Decoder V66\LogFiles\Contact_Log
4. Click the GREEN add (+) button
5. Ensure the check box is clicked in the lower window
6. Click 'Save and apply'



When a QSO is saved in MRP40 Log4OM will harvest the data and save it in the Log4OM logbook.

VarAC integration with Log4OM



VarAC is provided by Irad Deutsch 4Z1AC as both a free trial version and a full featured version for purchase. It provides users with an interface to the free Vara weak signal modems enabling keyboard communications similar to RTTY and PSK but with weak signal efficiency close to that of WSJT.

Irad has cooperated with Log4OM to provide full QSO logging and station lookup with worked before and confirmation status.

As a contact is made the callsign, frequency and mode are transferred to the Log4OM input UI for checking worked before status, confirmation level and online lookup data. When VarAC logs the QSO the QSO is automatically transferred to the Log4OM logbook database and displayed in the recent QSO list and the input window is cleared.

Vara & VarAC Sources

Vara Modems (HF, FM and SAT) are available here [EA5HVK | Weak signals Software (wordpress.com)]

VarAC is available here [Home | VarAC (varac-hamradio.com)]

Setup instructions

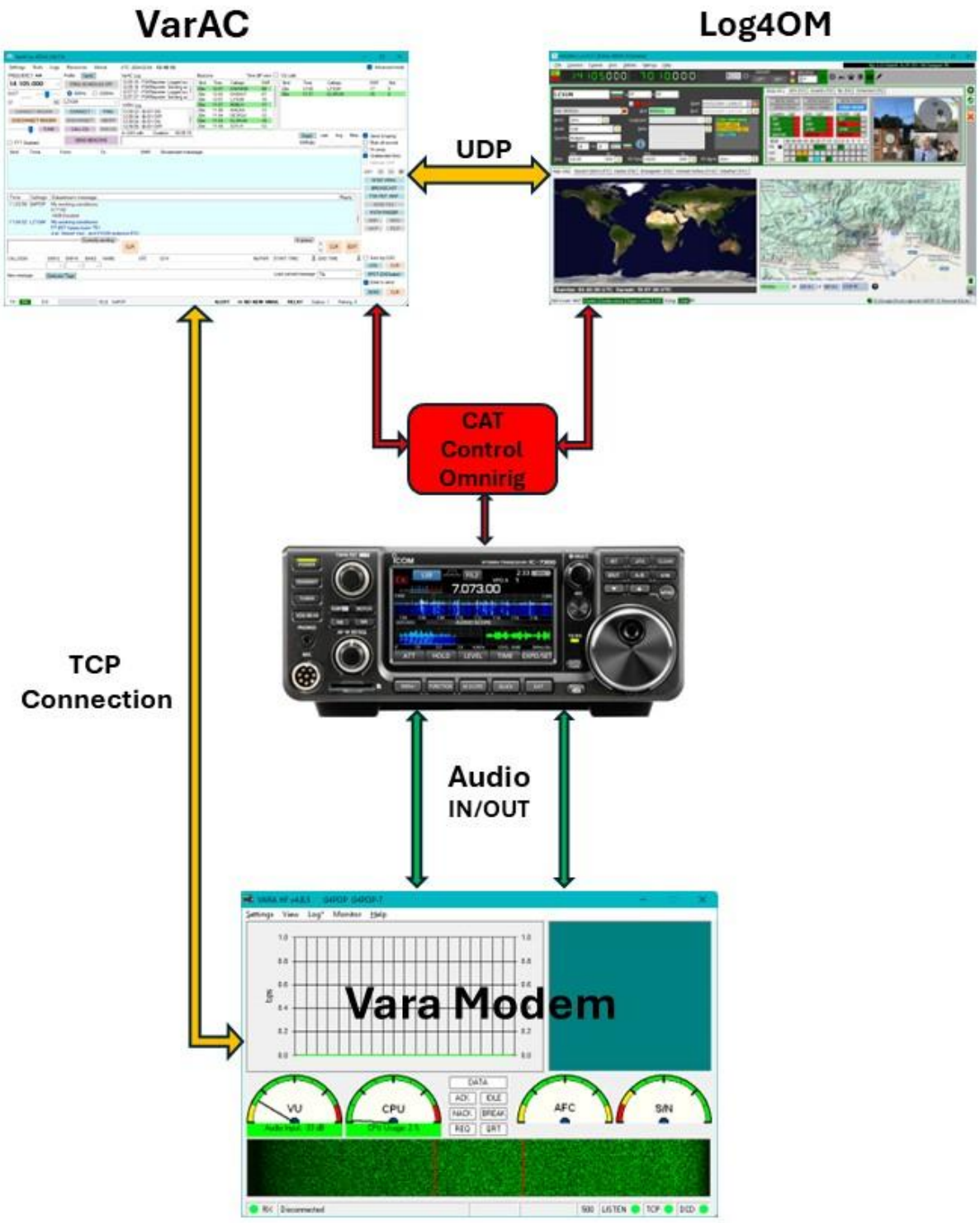
If the user is already set up for WSJT or other data modes then adding VarAC is simple if using Omnirig.

1. In the Log4OM Settings/Program Config/connections/UDP tab, set up an Inbound connection for VarAC to port 1200 – service type 'ADIF-Message'.
2. In the Log4OM Settings/Program Config/connections/remote control tab check the box 'Enable remote control' and ensure the remote-control port is set to 2241
3. Click Save and apply.
4. In the VarAC/settings/rig control and Vara configuration/rig tab select 'Omnirig' for PTT Config, Frequency control and 'Rig# 1'
5. In the VarAC/settings/rig control and Vara configuration/Logging tab, select 'Send log to – Log4OM(UDP)'
6. In the VarAC/settings/rig control and Vara configuration/Logging tab, check the box 'Automatic callsign lookup' and ensure the port number is set to '2241'
7. Click 'Save and Exit'

The connection between VarAC and Log4OM is now completed for instructions for using VarAC and Vara HF please see the Vara user guides.

A graphic of the connection setup is shown below:

Schematic of VarAC connections



JT programs integration

Introduction

JT (Joe Taylor) based applications use a special UDP message protocol to share information with listeners. One of those messages is the currently decoded calls, another is the logged contact when you save a QSO in the JT program.

There are many other messages containing various information (Data) being shared by the various different software applications.

Once set up to read (Receive) messages via UDP, Log4OM searches for the 'QSO' message to be logged.

IMPORTANT NOTE:

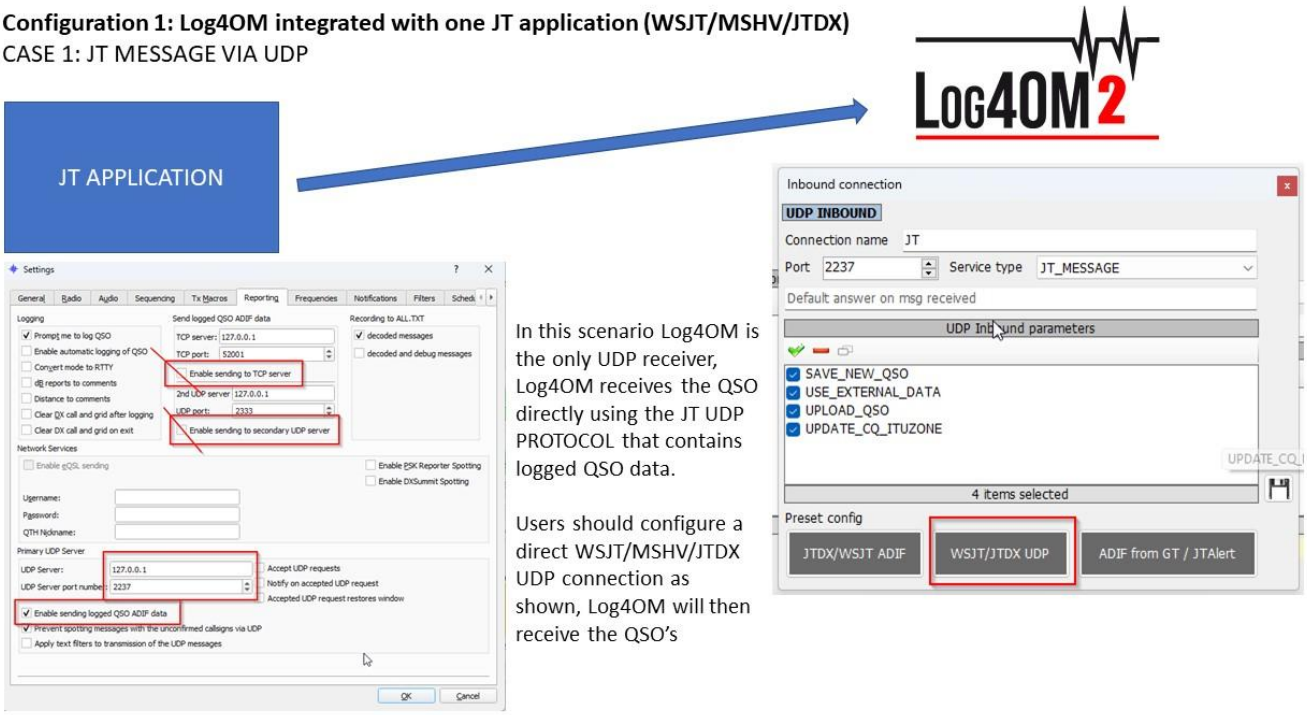
When an application is sending a UDP message (not a broadcast/multicast message) as JTDX or WSJT-X, that message is 'Captured' by the first application that reads the UDP data from the exposed network, no other application will now see that message, its gone!

Once the message has been captured by the first application it is no longer available for other software to read, similar to putting a ten dollars bill on floor in a supermarket. The first person notices and collects the US$10 leaving nothing for any other shopper in the supermarket to find!

Log4OM, Gridtracker, JTAlert and other applications that listen for a UDP message from JTAlert are competing to receive the message first. That means that sometimes JTAlert can get the message first, sometime GT, sometime Log4OM. This is not good behaviour because if Log4om 'Captures' a message that is of interest to JTAlert, then JTAlert will not receive the info. In the same way, if GRIDTRACKER 'Captures' a QSO message, Log4Om will receive the message and cannot log it.

That's why, when configuring multiple JT applications, ONLY ONE APPLICATION SHOULD BE CONFIGURED TO USE JT UDP MESSAGES, and this application should take care of REBROADCASTING the relevant information to other applications that are waiting for the information.

Configuration 1: Log4OM integrated with one JT application (WSJT/MSHV/JTDX)
CASE 1: JT MESSAGE VIA UDP

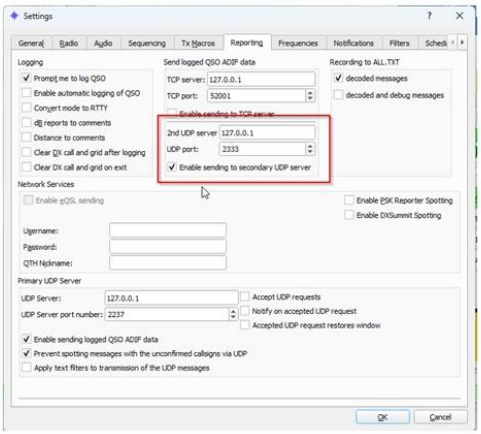


In this scenario Log4OM is the only UDP receiver, Log4OM receives the QSO directly using the JT UDP PROTOCOL that contains logged QSO data.

Users should configure a direct WSJT/MSHV/JTDX UDP connection as shown, Log4OM will then receive the QSO's

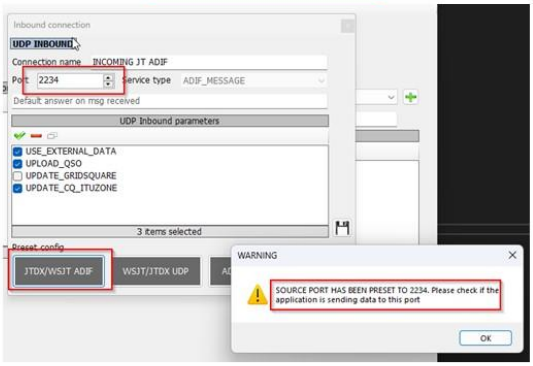
Configuration 1: Log4OM integrated with one JT application (WSJT/MSHV/JTDX)

CASE 1: ADIF MESSAGE



Although not reccommended in this configuration, the user may want to use a specific ADIF message to log QSO's into Log4OM.
In that case configure an ADIF_INBOUND message into Log4OM listening on port 2333

The Log4OM default port should also be updated to 2333 instead of 2234

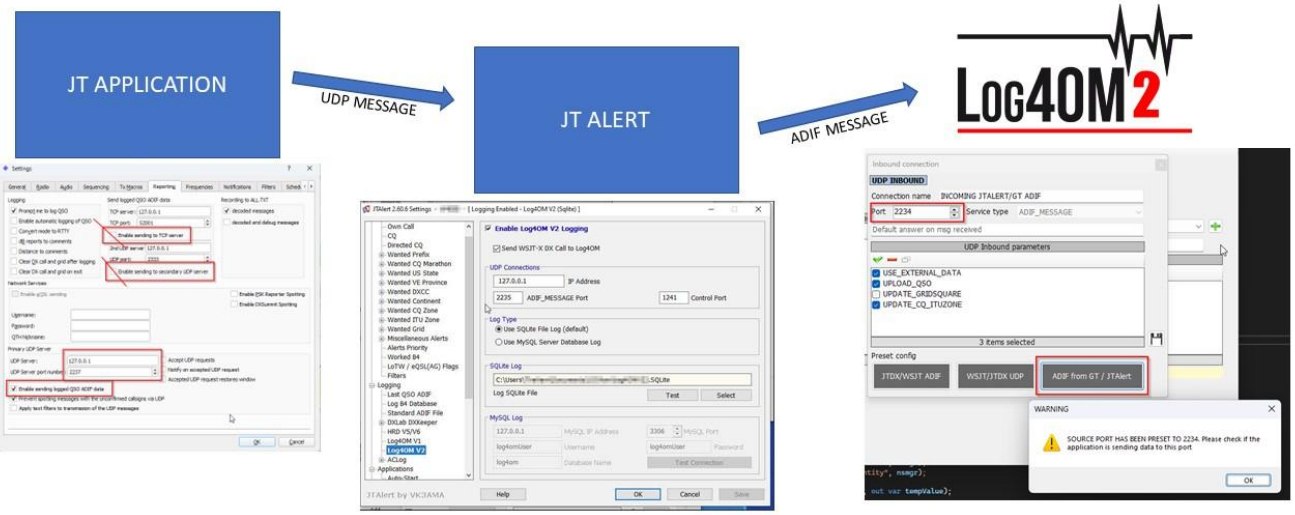


PLEASE NOTE:
DO NOT ALSO CREATE A JT CONNECTION. If you create also a JT CONNECTION
The QSO will be received twice by Log4OM, potentially causing overhead (The QSO will not be logged due to duplicate keys check, but there wil be a lot of errors in the program log)

Configuration 2: Log4OM with JT software and another application (GRIDTRACKER or JTALERT)

In this situation, only one application should get the JT message, use the information and then relay the relevant data to other applications.

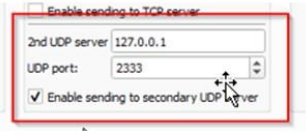
The simplest way is to have JTAlert or GridTracker, to receive JT UDP messages.
JTAlert should then foward/relay the QSO data to Log4OM via ADIF MESSAGE



More options:

Once familiar with how UDP messages work it is possible to set up different configurations.

Example:
Enable a secondary UDP ADIF broadcast on JTDX, then put Log4OM reading the message using an ADIF INBOUND CONNECTION on port 2333 while you have JTAlert reading the JT PROTOCOL messages on port 2237



In this case, JTAlert should NOT send ADIF messages to Log4OM, because Log4OM will receive them twice (one from JTDX application and one from JTAlert ADIF message).

If Log4OM is configured to listen on port 2333 for ADIF messages from JTDX and JTAlert is sending ADIF messages to port 2341 then no program will received or act on the data sent.

BUT...

Other options can be explored, that may be extremely powerful but also create problems...

Both Log4OM and JTAlert are capable of 'listen and discard' a UDP message on port X and 'retransmit' the message to another listener (but only one, or the user will create another competition for the data on secondary broadcast) on a DIFFERENT PORT, Log4Om does this with the 'proxy connection' type.

Basically, it reads the UDP message on port X, uses it and resend the message to port Y, where another application is waiting the «JTDX/WSJT message».

This way, it is possible to create chains between applications, where every application is receiving a JT MESSAGE, uses it and then forward the message on another port to another listener.

So, if you configure:

JTDX to send messages on port 2237

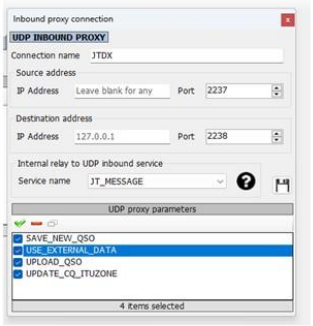
Log4OM to read messages from port 2237, and rebroadcast using proxy feature

To port 2238, JT Alert can be configured to «listen» JTDX on port 2238 instead, and

have a chain of applications working 'one to one' with JTDX

as if they were the only ones. Obviously configuring a JT rebroadcast on

JTALert to another port you can "connect" GRIDTRACKER or another application.



When using WSJT and associated variants in all cases CAT control is via OMNIRIG, the appropriate radio (Rig1 or Rig2) must be selected in the WSJT software and the Log4OM program – **DO NOT SELECT THE RADIO BY NAME**

1. Users MUST use Omnirig and select the correct rig profile
2. Log4OM, Omnirig and WSJT must all be 'RUN AS AN ADMINISTRATOR'
3. In Log4OM/settings/Program configuration/CAT Interface select 'Invert SSB side (Digital)
4. In Log4OM/settings/Program configuration/CAT Interface select 'Switch to digital mode when required' - Also SELECT FT8 from the drop-down menu.

5. In WSJT File/Settings/Radio select the correct **Omnirig Rig (NOT the radio)**, select CAT as PTT method, DATA/PKT as Mode and FAKE IT as 'Split operation'

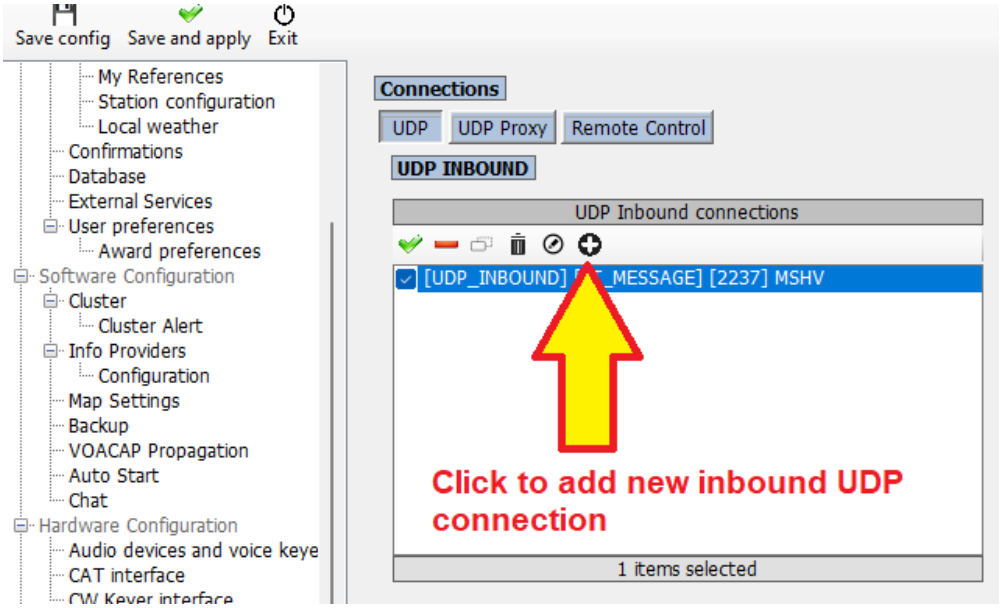
6. Ensure that all Log4OM and WSJT UDP settings MATCH and are not already in use by other software.

JT8CALL with Log4OM

The only interaction possible between the two programs is by using the Log4OM ADIF Monitor facility to interrogate the JS8CALL ADIF file, see section about ADIF Monitor in this user guide.
No other integration is possible with JS8CALL

Connecting direct to WSJT-X, WSJT-Z & MSHV

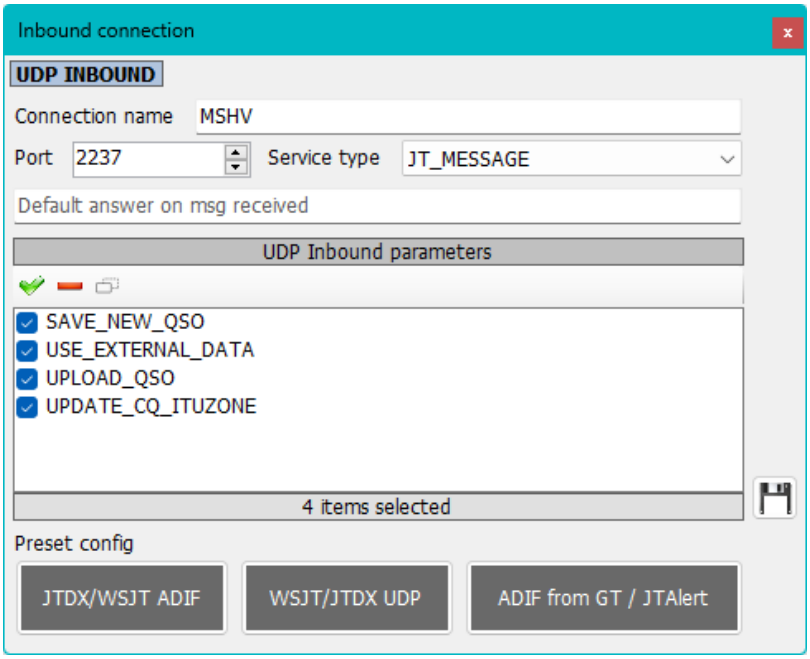
In Log4OM settings/program configuration/software integration/Connections UDP inbound click on the 'Plus' (+) Add new item icon to open the add connection menu.



PORT NUMBERS SHOWN ARE FOR EXAMPLE ONLY AND MAY NOT MATCH THE USER SELECTION

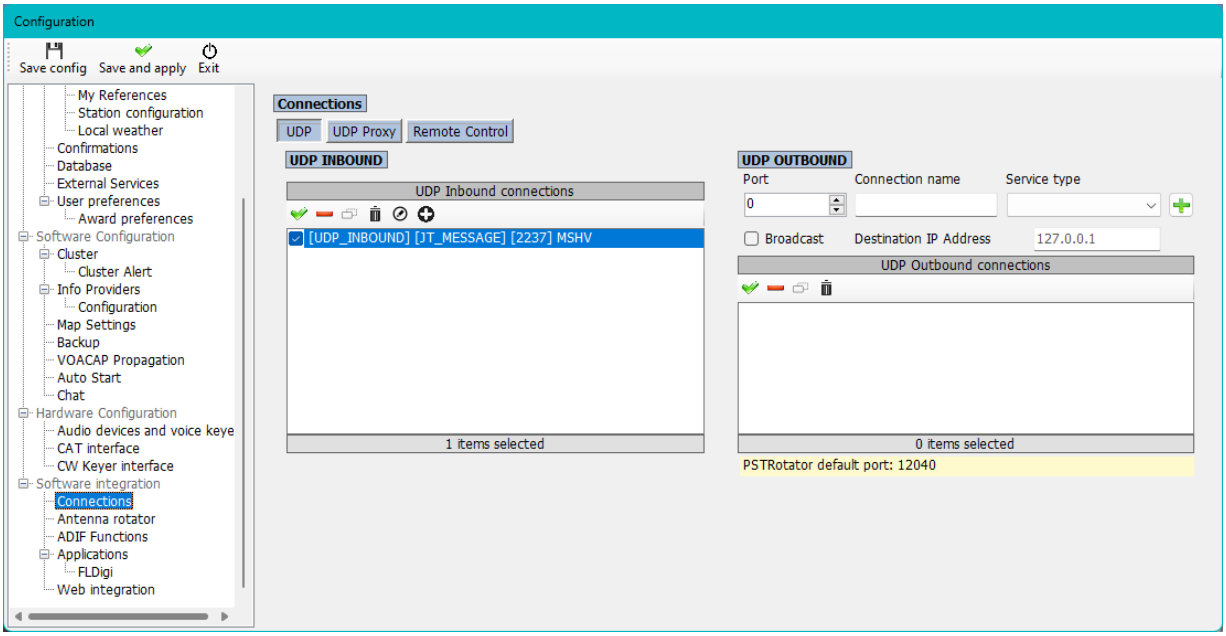
UDP Inbound set up

Either use one of the three preconfigured buttons at the bottom of the dialog, dependent on the connection type required or manually configure the connection.



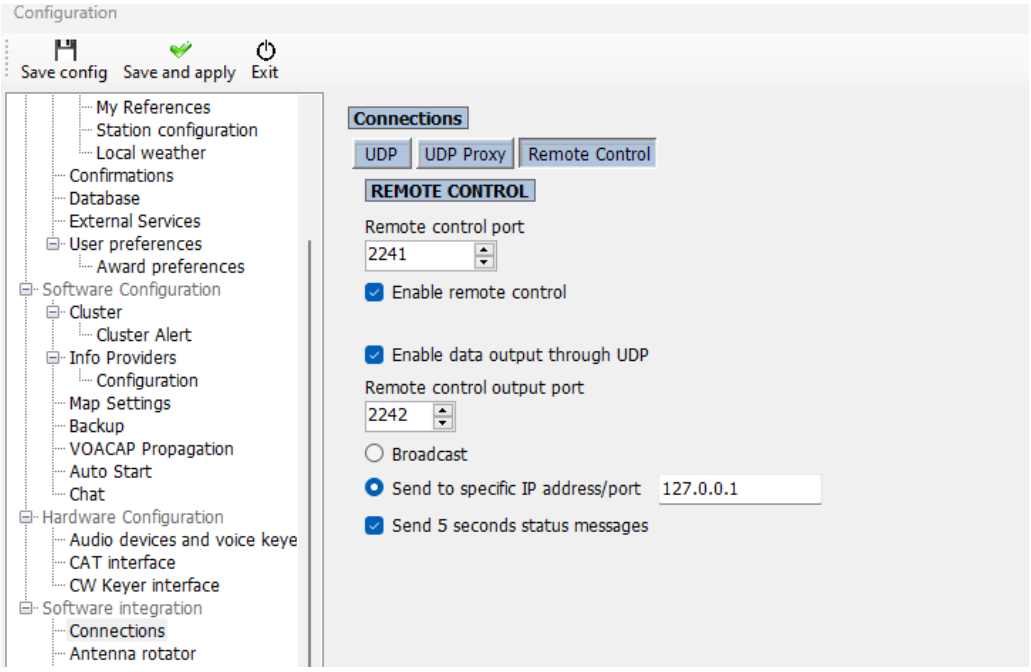
PORT NUMBERS SHOWN ARE FOR EXAMPLE ONLY AND MAY NOT MATCH THE USER SELECTION

- Complete the connection name field, in this case MSHV
- Enter port number that matches that selected in WSJT-X/WSKT-Z/MSHV program in the port field
- Select 'Service type' JT_MESSAGE
- Check the required parameter to be used during saving the QSO
- Click the floppy disk icon to add the connection to the list as in the image below
- Click 'Save and Apply'



PORT NUMBERS SHOWN ARE FOR EXAMPLE ONLY AND MAY NOT MATCH THE USER SELECTION

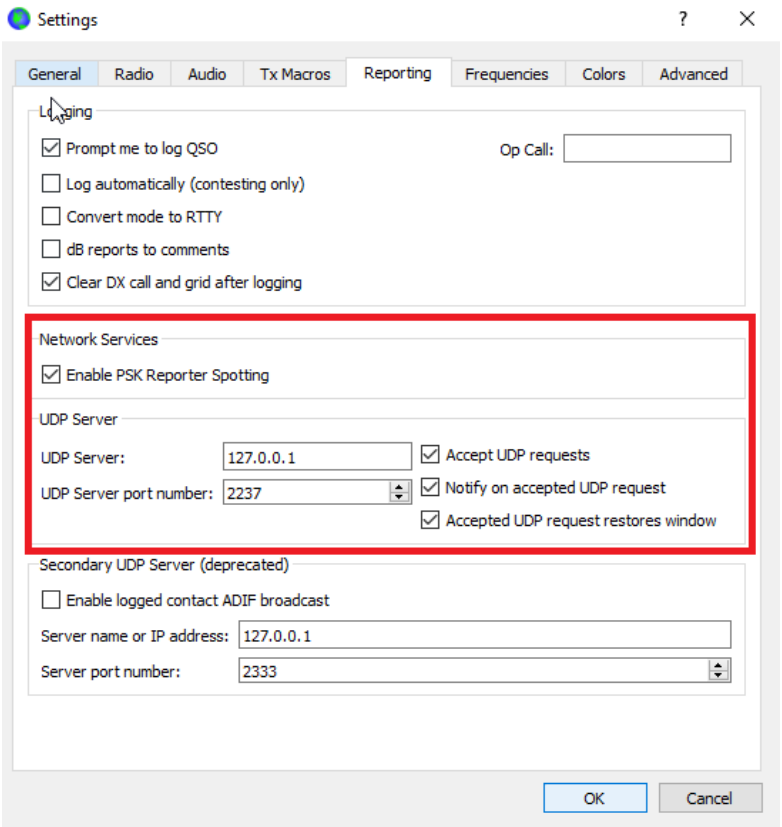
Complete the remote-control menu as shown below:



PORT NUMBERS SHOWN ARE FOR EXAMPLE ONLY AND MAY NOT MATCH THE USER SELECTION

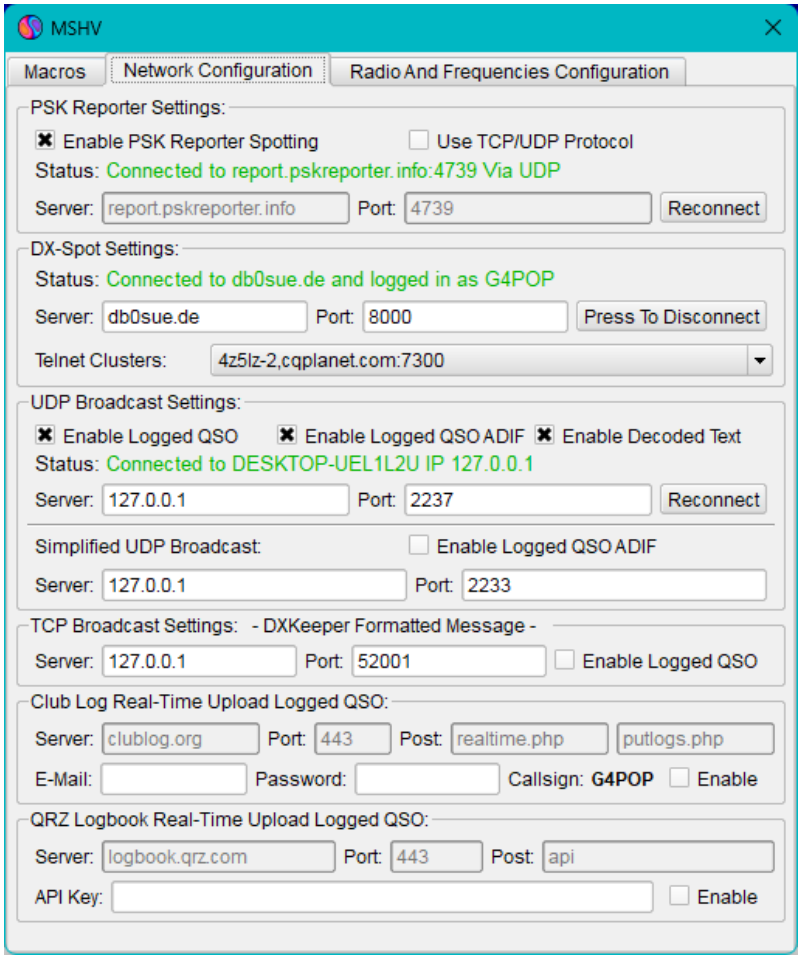
NOTE: Do not use other QSO insert functions from JTAlert or by using a UDP ADIF_INBOUND function or any ADIF File Monitor otherwise it will cause duplicate QSO's to be logged.

In the WSJT File/Settings/Reporting tab complete the settings outlined in red in the image below, ENSURING THE PORT NUMBERS MATCH THOSE SELECTED IN LOG4OM



PORT NUMBERS SHOWN ARE FOR EXAMPLE ONLY AND MAY NOT MATCH THE USER SELECTION

Or in the MSHV Options/Macros/Network connections menu select the choices shown below, ENSURING THE PORT NUMBERS MATCH THOSE SELECTED IN Log4OM connections



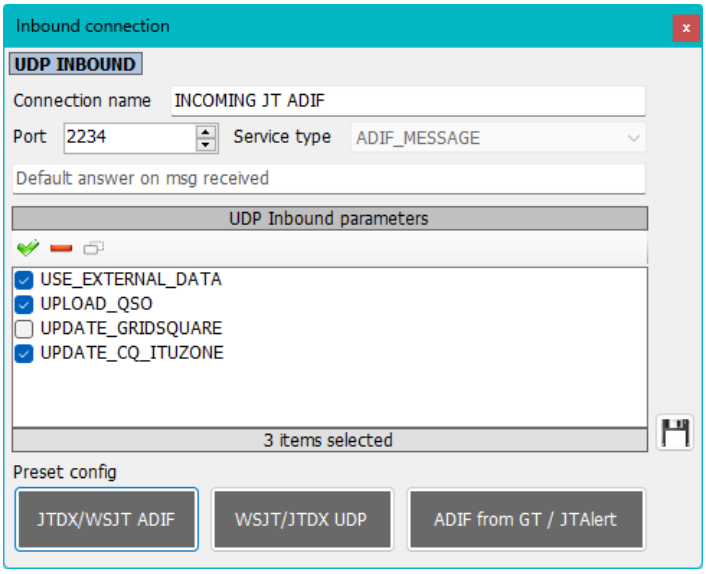
PORT NUMBERS SHOWN ARE FOR EXAMPLE ONLY AND MAY NOT MATCH THE USER SELECTION

- Click OK then close both programs and restart

Connecting to JTDX/WSJT via ADIF

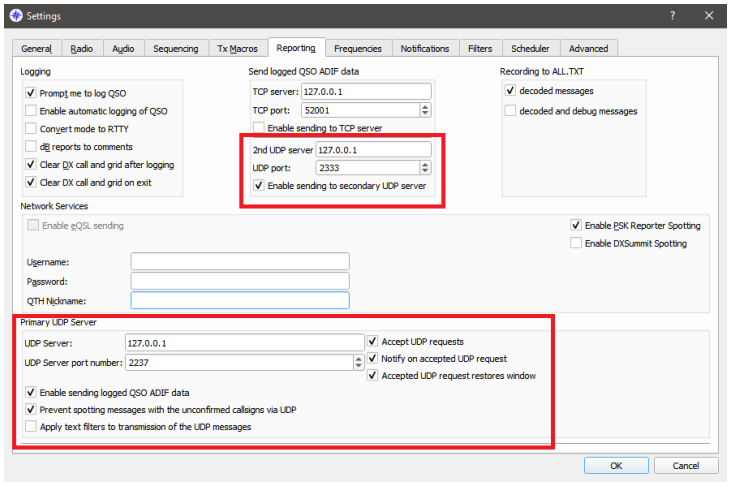
In Log4OM settings/program configuration/software integration/Connections UDP inbound

- Enter a port number in the port field that matches the port selected in JTDX/WSJT
- Complete the connection name field, in this case Incoming JT ADIF
- Select 'Service type' ADIF_MESSAGE
- Select the required parameters.
- Click the floppy disk icon to add the connection to the list.
- Click 'Save and Apply'



PORT NUMBERS SHOWN ARE FOR EXAMPLE ONLY AND MAY NOT MATCH THE USER SELECTION

In JTDX File/Settings/Reporting tab complete the settings outlined in red in the image below, click OK then close both programs and restart – Ensure the port numbers match that selected in Log4OM UDP Inbound connections



PORT NUMBERS SHOWN ARE FOR EXAMPLE ONLY AND MAY NOT MATCH THE USER SELECTION

In JTDX File/Settings/Radio tab select whichever Omnirig rig is being used for JTDX

Calls entered in JTDX will be sent to Log4OM for lookup and QSO's logged in JTDX will auto-log to Log4OM

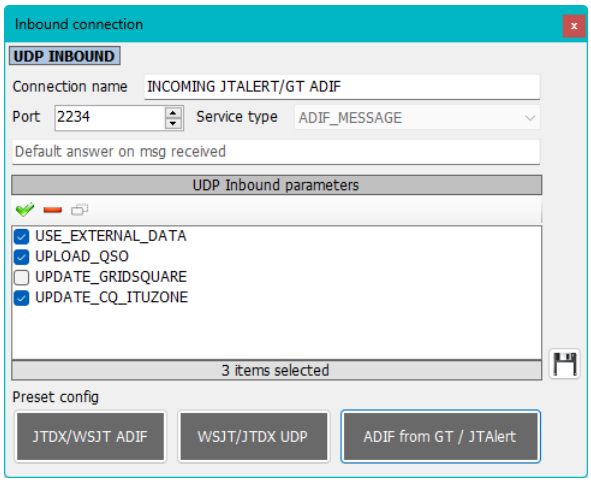
JTAlert or Gridtracker set-up

In the Log4OM settings/Program configuration/connections

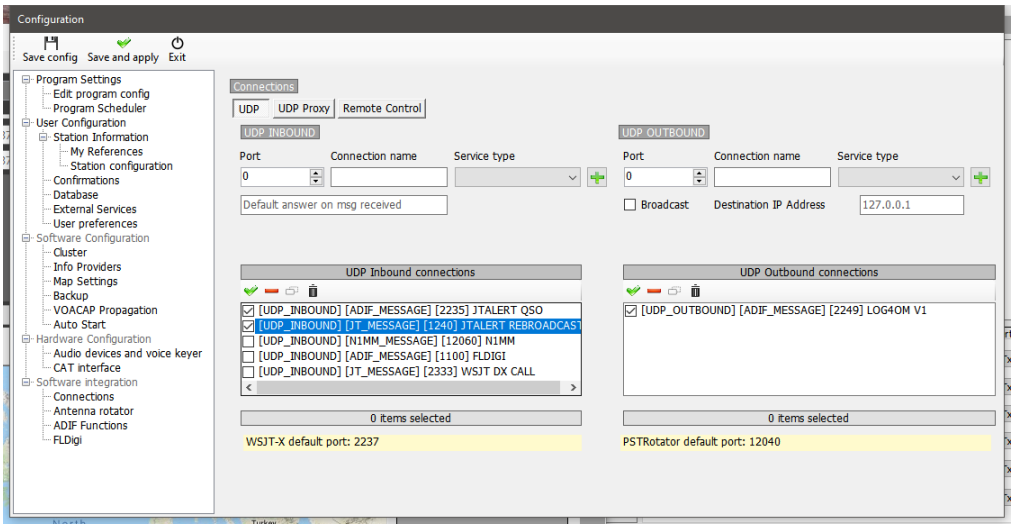
1. Complete the following steps 1 to 3.
2. Set up the WSJT or JTDX decoder of choice.
3. Finally complete the five steps to set up JTAlert.

Log4OM

1.Create an inbound connection in Log4OM V2 with a UDP Port number that matches that selected in JTDX/WSJT and connection named ‘Incoming JTAlert/GT ADIF’ – Service type “ADIF_MESSAGE"



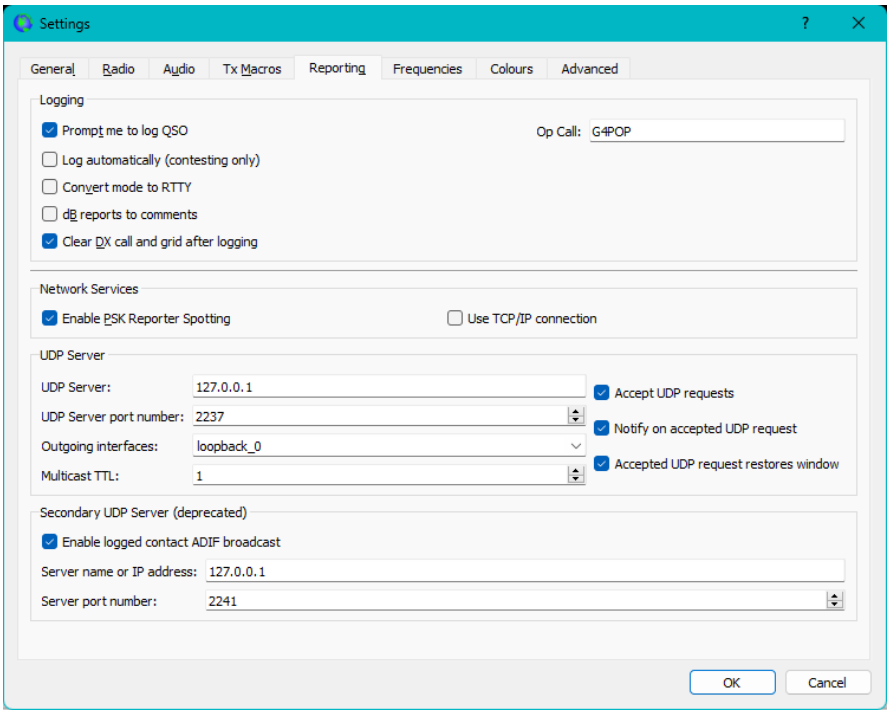
2. Create a "JT_MESSAGE" inbound connection in Log4OM V2 called JTALERT REBROADCAST with a UDP Port number to match that set in JTAlert



3. Follow instructions for the decoder being used as below.

WSJT-X/WSJT-Z

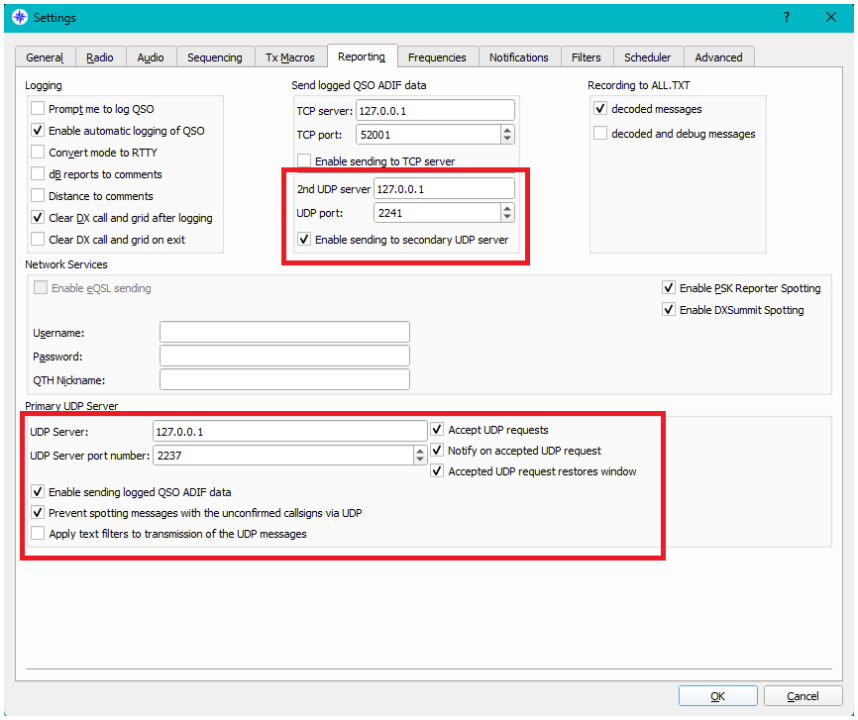
In WSJT-X/WSJT-Z File/Settings/reporting check the boxes and set the ports as shown below.



PORT NUMBERS SHOWN ARE FOR EXAMPLE ONLY AND MAY NOT MATCH THE USER SELECTION

JTDX

In JTDX File/Settings/Reporting tab complete the settings outlined in red in the image below, click OK



PORT NUMBERS SHOWN ARE FOR EXAMPLE ONLY AND MAY NOT MATCH THE USER SELECTION

In JTDX File/Settings/Radio tab select whichever Omnirig rig is being used for JTDX

NOTE: When using JTDX with JTAlert ADIF monitor in Log4OM MUST BE DISSABLED to avoid duplicate QSO's

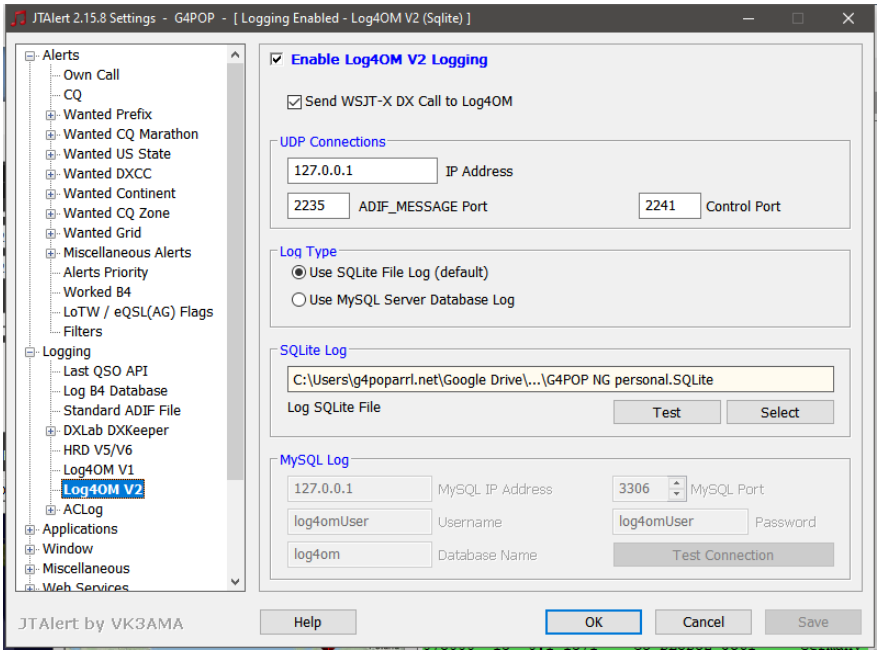
JTAlert setup

1.In JTAlert in settings/manage settings/Logging/Log4OM V2 in JTAlert, enable the "Send WSJT-X DX call to Log4OM" and "Enable Log4OM V2 Logging"

2.Set the Control port in JTAlert to match the port used in Log4OM V2 (Step 1.)

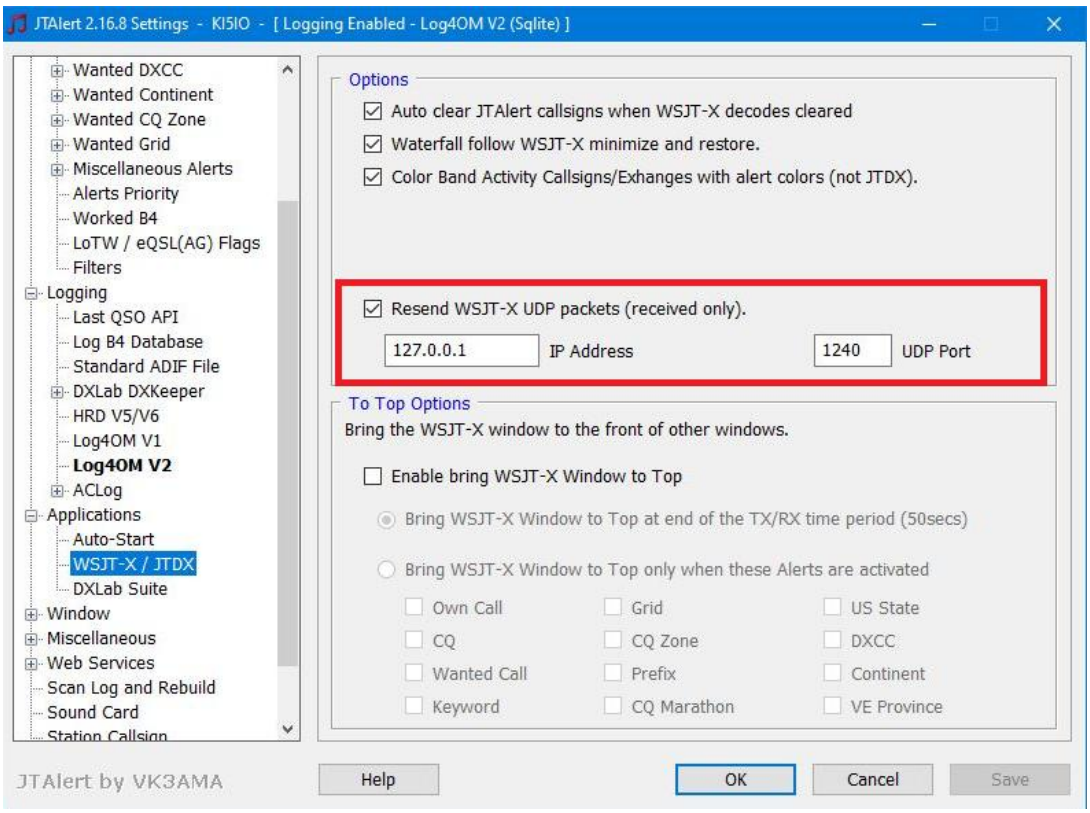
3.Set the ADIF_MESSAGE port in JTAlert to match the port used in Log4OM V2 (Step 2.)

4. Select the path to the Log4OM SQLite database in the 'SQLite log' field or select Mysql if not using the standard SQLite database.



PORT NUMBERS SHOWN ARE FOR EXAMPLE ONLY AND MAY NOT MATCH THE USER SELECTION

5. In settings/manage settings/applications/WSJT-X/JTDX in JTAlert enable "Resend WSJT-X UDP Packets (received only)" and set the IP Address to 127.0.0.1 and UDP Port number to match that set in Log4OM V2 step 3

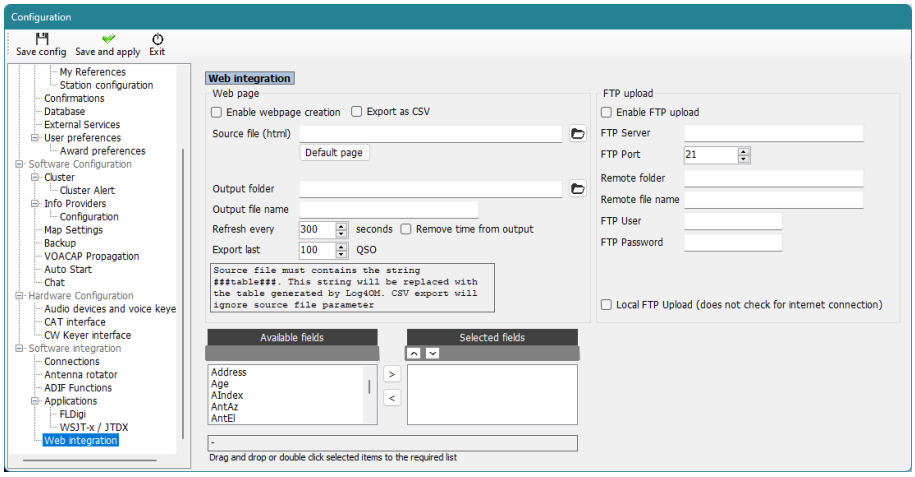


PORT NUMBERS SHOWN ARE FOR EXAMPLE ONLY AND MAY NOT MATCH THE USER SELECTION

Web Integration

The program provides facilities for uploading web data by FTP upload.

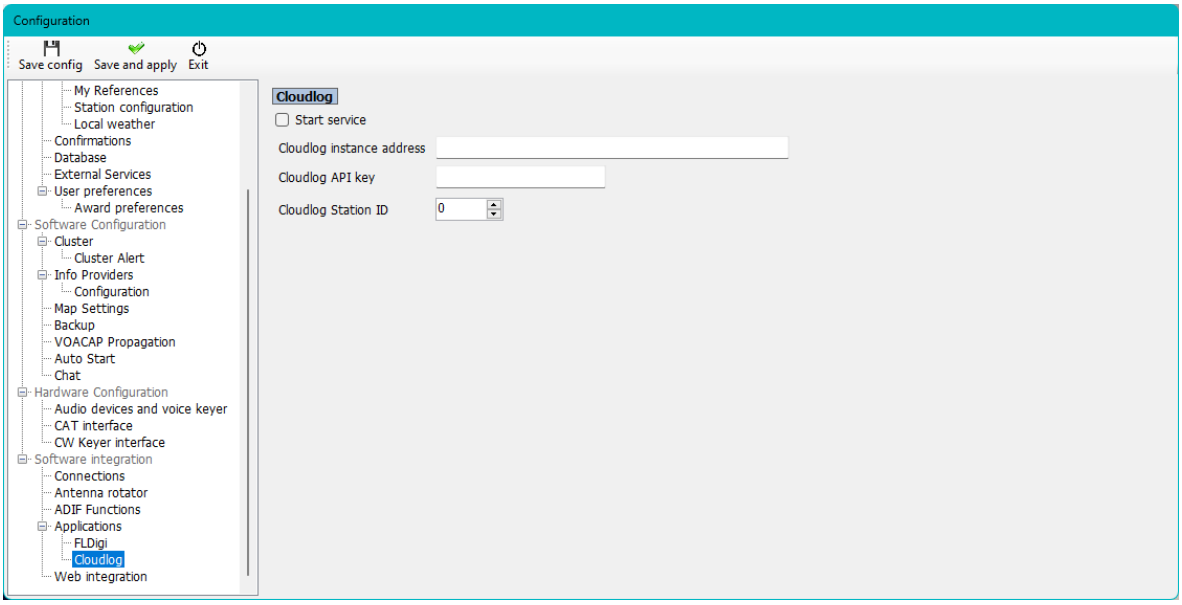
1. Enable webpage creation.
2. Complete the source and output fields.
3. Select the required fields by drag and drop.
4. Complete the FTP upload information.
5. Click save and apply.



A web page upload can also be instigated from the Utilities menu by clicking on ‘Generate Webpage now’.

Cloudlog integration

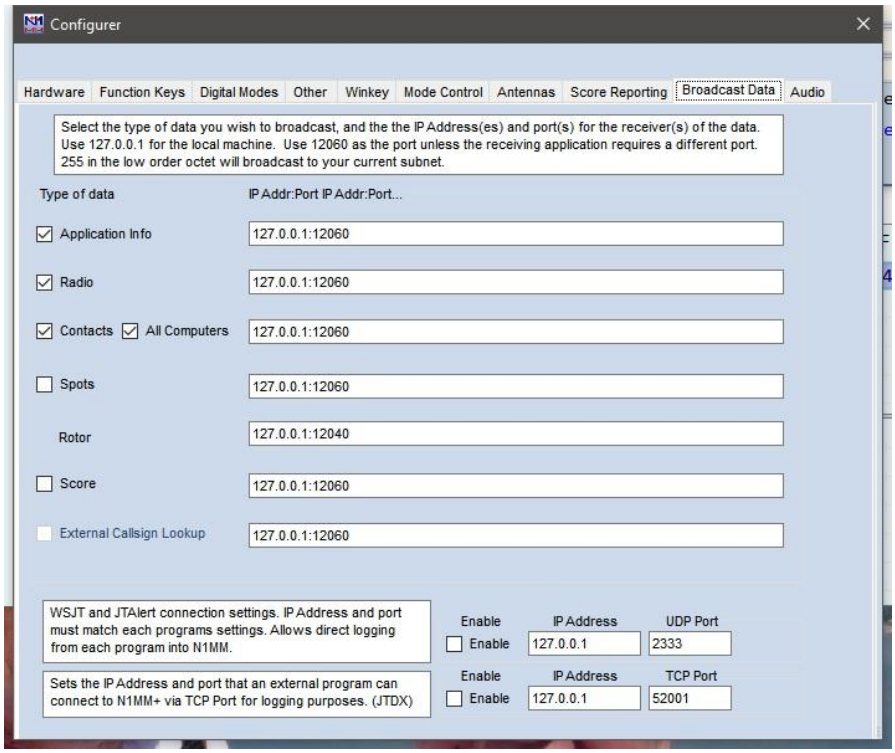
In the Settings/Program config/Applications/cloudlog tab it is possible to set up automatic upload to the Cloudlog web service.



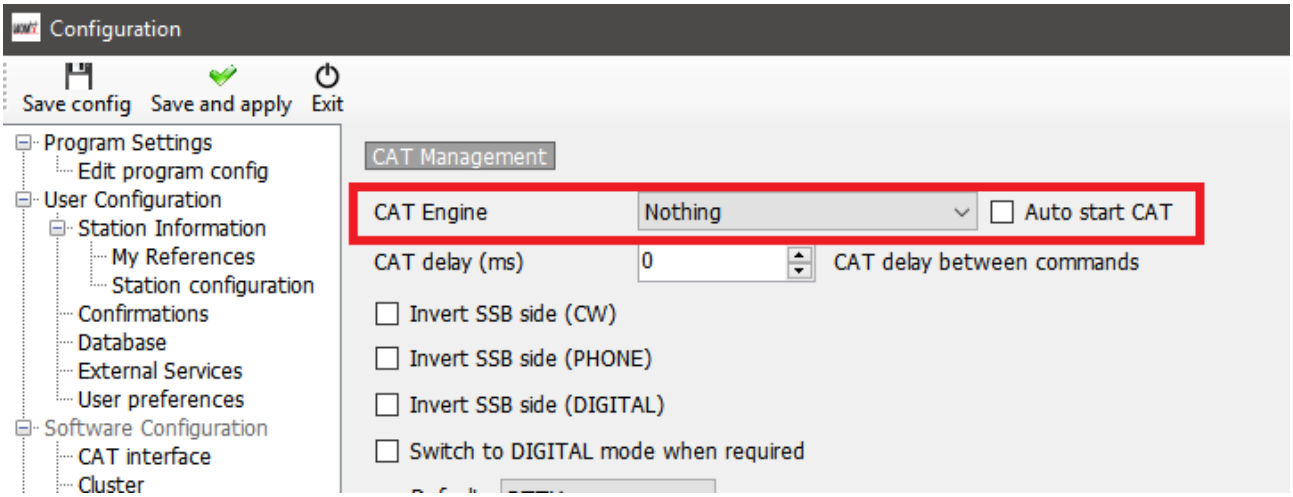
1. Enter the users Cloudlog service address
2. Enter the Cloudlog API key provided by Cloudlog
3. Enter the ‘Unique station ID’
4. Check the box marked ‘Start Service’
5. Click ‘Save and apply’

N1MM Contest Logger Integration

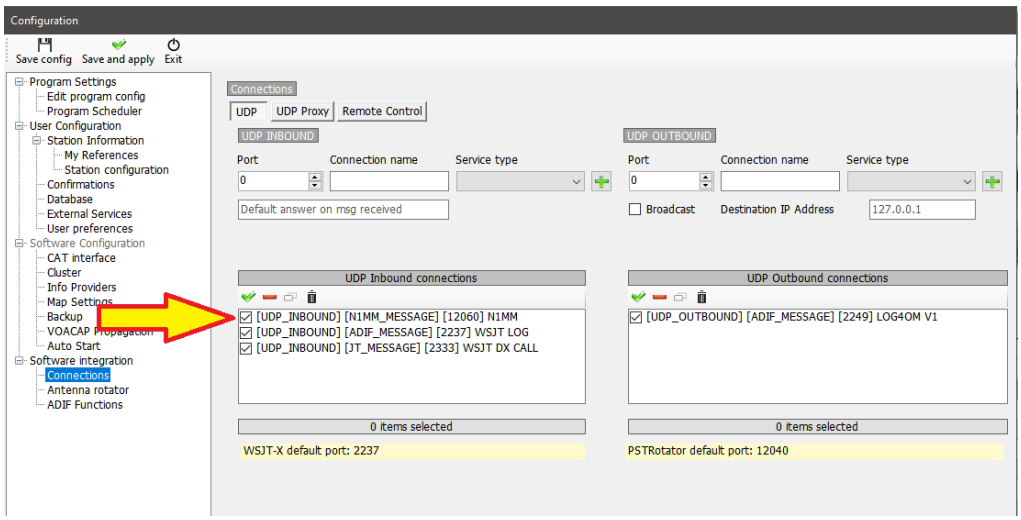
1. In the N1MM Config/Configure ports, mode control and other select the 'Broadcast Data tab
2. Check the top three check boxes and ensure the IP addresses and port numbers are equal to 127.0.0.1:12060 as below.



3. In Log4OM choose 'Nothing' in the Configuration/CAT tab



4. Open the Configuration/Software Integration/Connections tab
5. Add an inbound UDP connection - Service type = N1MM_Message on Port number = 12060

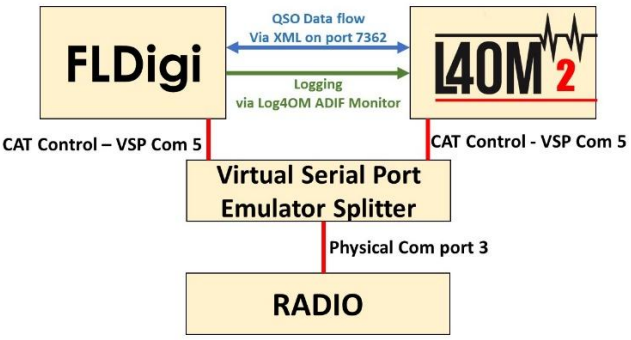


6. Click 'Save and Apply' **Restart both programs** and commence logging in N1MM and you will see the QSO's added to Log4OM as you add the QSO in N1MM

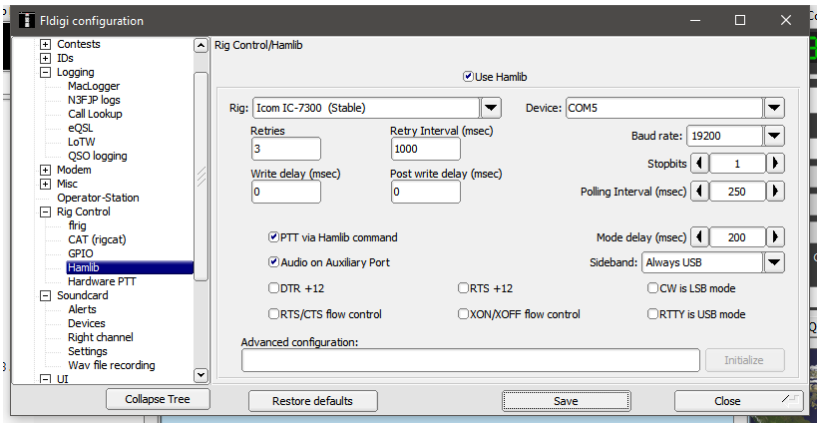
QSO's will be automatically be updated from whichever online lookup system the user has selected to add the data not normally saved by N1MM.

FLDigi Integration

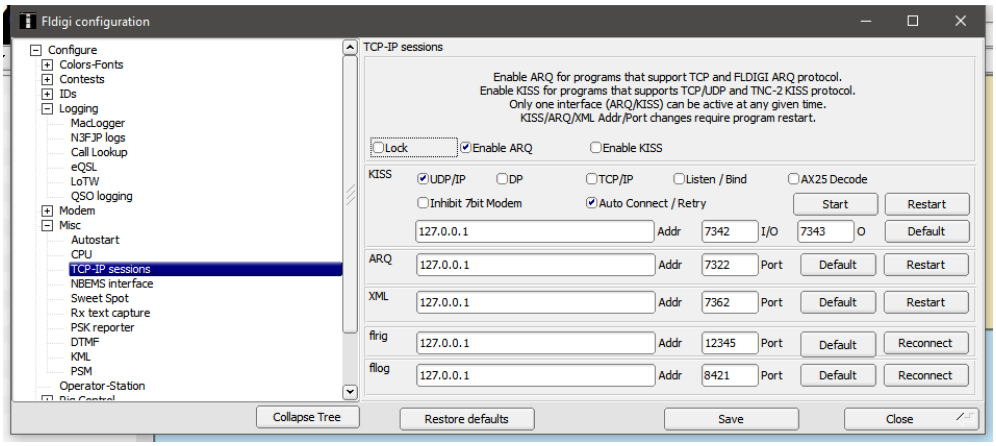
All popular data modes, CW and RTTY are provided by FLDigi which is easily to interface with Log4OM version 2.



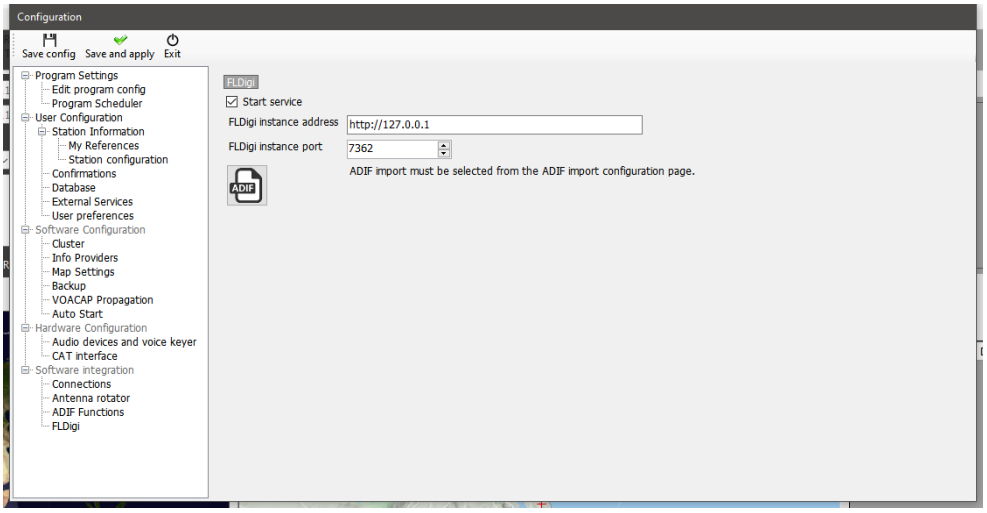
- Install Eterlogic VSP Manager or similar and set up a 'Splitter'
- Connect Log4OM/Omnirig to the splitter's com port
- In FLDigi in the Config dialog/Rig control/Hamlib or Rigcat configure CAT for the connected radio



- In FlDigi go to the Configure/Config dialog/Misc/TCP-IP sessions menu
- Ensure that enable ARQ is selected and that the XML interface is set as shown below.
- Check the 'Lock' check box, save and close



- In Log4OM go to the Settings/Program configuration menu and select the FLDigi tab
- Ensure that the FLDigi instance address is set to http://127.0.0.1 and the FLDIG Port instance to 7362 (The same as in the FLDigi XML menu above)

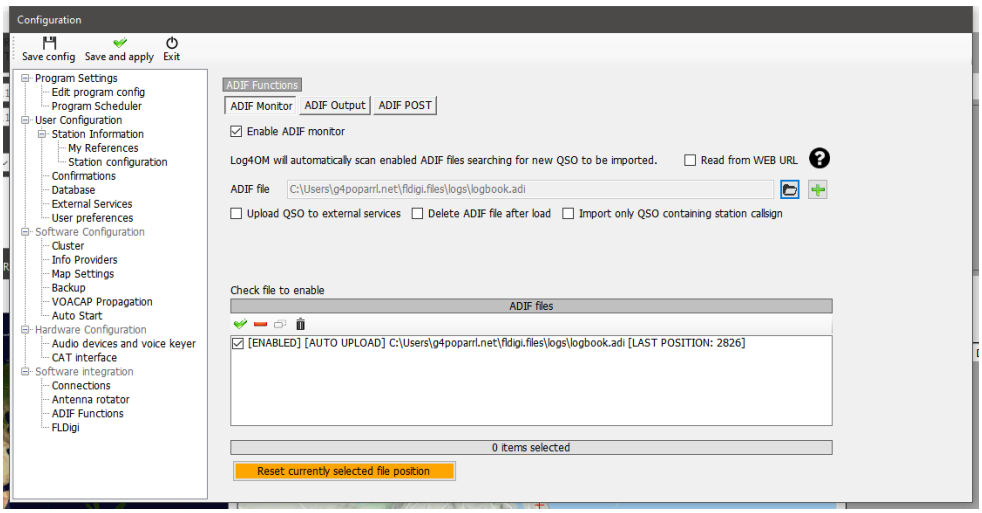


- Check the 'Start service' check box and click the save config icon at the top left corner.

The above actions connect Log4OM to FLDigi to enable Log4OM to send the frequency and mode to FLDigi and the entered call sign in FLDigi to be displayed and looked up in Log4OM.

FLDigi does not send the frequency and mode to Log4OM its one-way traffic!

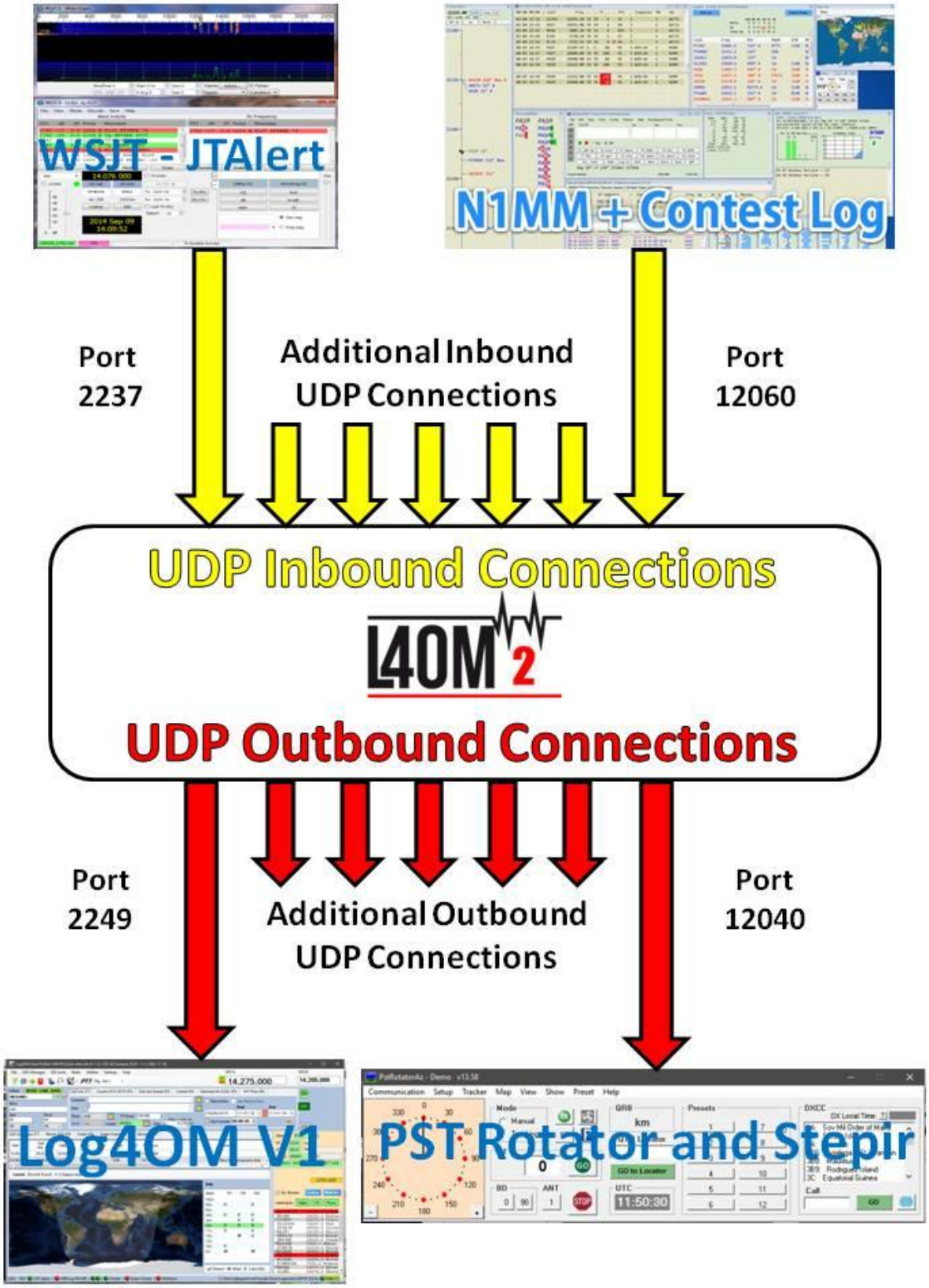
- Click on the ADIF icon in the Log4OMSettings/Program configuration/FLdigi tab



- In the resulting ADIF functions/ADIF monitor tab check the 'Enable ADIF monitor' check box
- Click the button to the right of the 'ADIF file' field
- Navigate to the location of the FLDigi logbook ADIF file (Usually C:\Users\YOUR USER NAME\fldigi.files\logs\Logbook.adi) or (C:\Users\YOUR USER NAME\fldigi.files\temp\Log.adif)
- If upload to online logs like QRZ. EQSL, HRDLog etc is required check the box marked 'Upload to external services'
- Click on the green **+** to the right of the ADIF File path field to insert it into the file list window and ensure the check box is checked.
- Click on 'Save and apply'

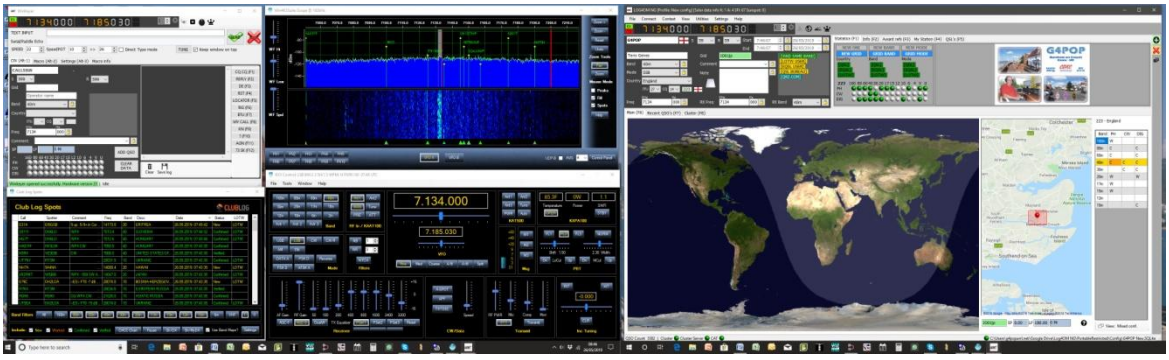
Setting the ADIF monitor in Log4OM causes each new QSO logged in FLDigi to be added to the Log4OM logbook.

UDP Connection Possibilities



Win4K3, Win4Icom & Win4Yaesu Suites Integration

(By Tom VA2FSQ)

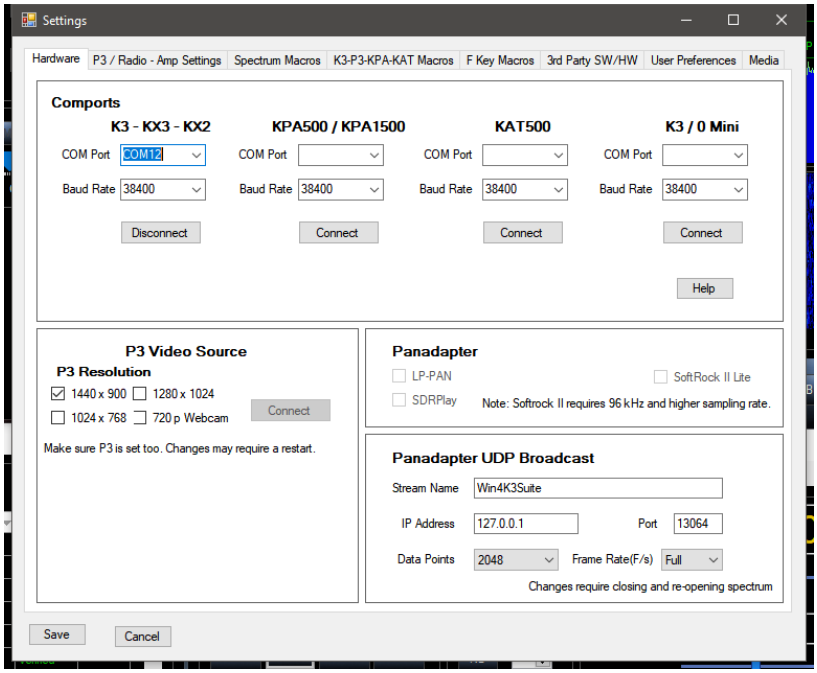


Win4K3Suite has a robust and trouble free comport sharing mechanism built in. Please take a few minutes to understand the concept below. Below the concept are specific examples.

Concept

Win4K3Suite supports many third party products by providing 4 auxiliary ports that accept CAT commands. These ports provide an interface that for all purposes look just like a K3, KX3 or Icom radios to the third party product.

First establish CAT control with the radio using the Hardware tab of the Win4(nn) suite Tools/settings menu using the Com port the radio is connected to and baud rate set in the radio menu.



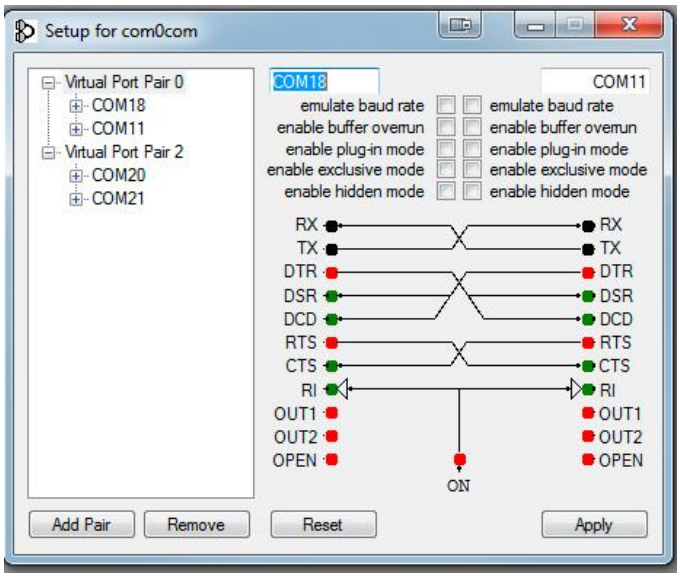
In order to use this feature you will need to download a third party utility that provides virtual serial port pairs to Windows.

The recommended utility which is free, is COM0COM which is open source and available at:
http://sourceforge.net/projects/com0com/files/com0com/2.2.2.0/

Be sure to use the version for your operating system. There is one for 32 bit (com0com 2.2.2.0 – i386-fre.zip) and another "Signed" for 64 bit (com0com-2.2.2.0-x64-fre-signed.zip). Only the version at this link is signed. You must use this version.

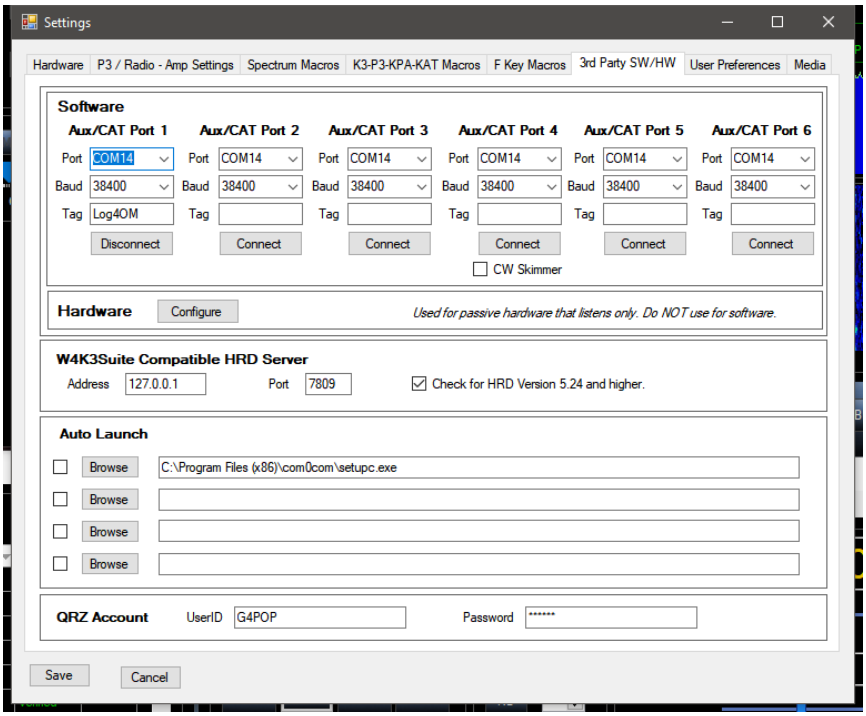
If a newer version is downloaded that is NOT signed there will be many errors even if the program is uninstalled it and then try to install this version. If this happens, contact support for how to fix the errors (for those in the know, use the device manager and delete the driver file, then reinstall).

After installation this, open the Windows start menu and in the com0com folder run "Setup." (Don't run Setup Command line).



There will be by default one pair already defined with weird letter names. Just click on the names and change the names of the comports to a comport name that **does not exist on your system**. In the above I chose COM13 and COM14 for one pair. Please note that many older software packages may not know about comports with numbers higher than COM9.

Once the comport pair is created, start up Win4K3Suite and select Tools, Settings, and the 3rd Party SW/HW tab. You will see the following screen:



In this screen there are 4 AUX/CAT ports. Each one can connect to a comport of a virtual comport pair. In this example, AUX/CAT Port 1 is connected to comport 18. The others are currently to other virtual port pairs.

All you need to do now is save the settings and then configure your third party product to connect to comport 11 which is the second comport of the COM11-COM18 pair. This has effectively connected the two products together via a null modem cable.

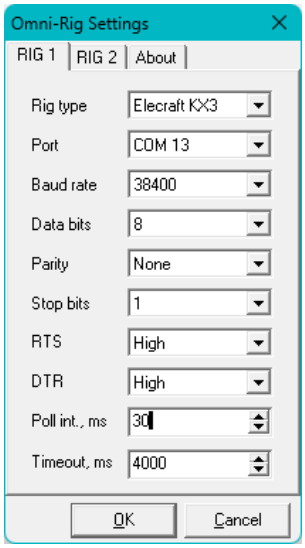
If you wish to connect a hardware device to your system such as an antenna tuner that supports the K3 or Kenwood radios, just plug it into an available serial port on your computer and enter that comport number in one of the AUX/CAT ports. No need for a comport pair.

There are other packages available that create virtual comport pairs such as one from Eltima ($$) and VSPE. Please note that while these work, none seem to be as stable as COM0COM.

DTR and RTS: Win4K3Suite does not support the use of DTR or RTS through it's virtual port facility. Always use software based PTT. A consequence is that software that can produce CW via DTR signal control will not work. (An example is N1MM's CW keying). Use a WinKey (best) or another serial port with a keying mod.

In the LOG4OM V2 Connect/CAT/Show Cat interface menu select the other end of the ComOcom pair, in this example port 13 and match the baud rate setting.

Note: Use Omnirig in Log4OM not Hamlib

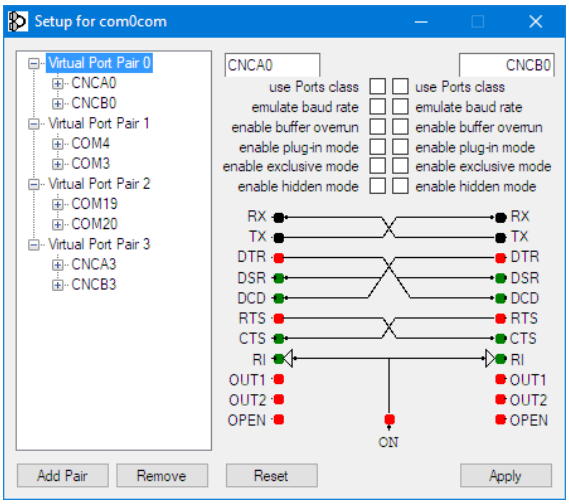


Program start sequence must now be first ComOcom then Win4(nn) suite and lastly LOG4OM V2

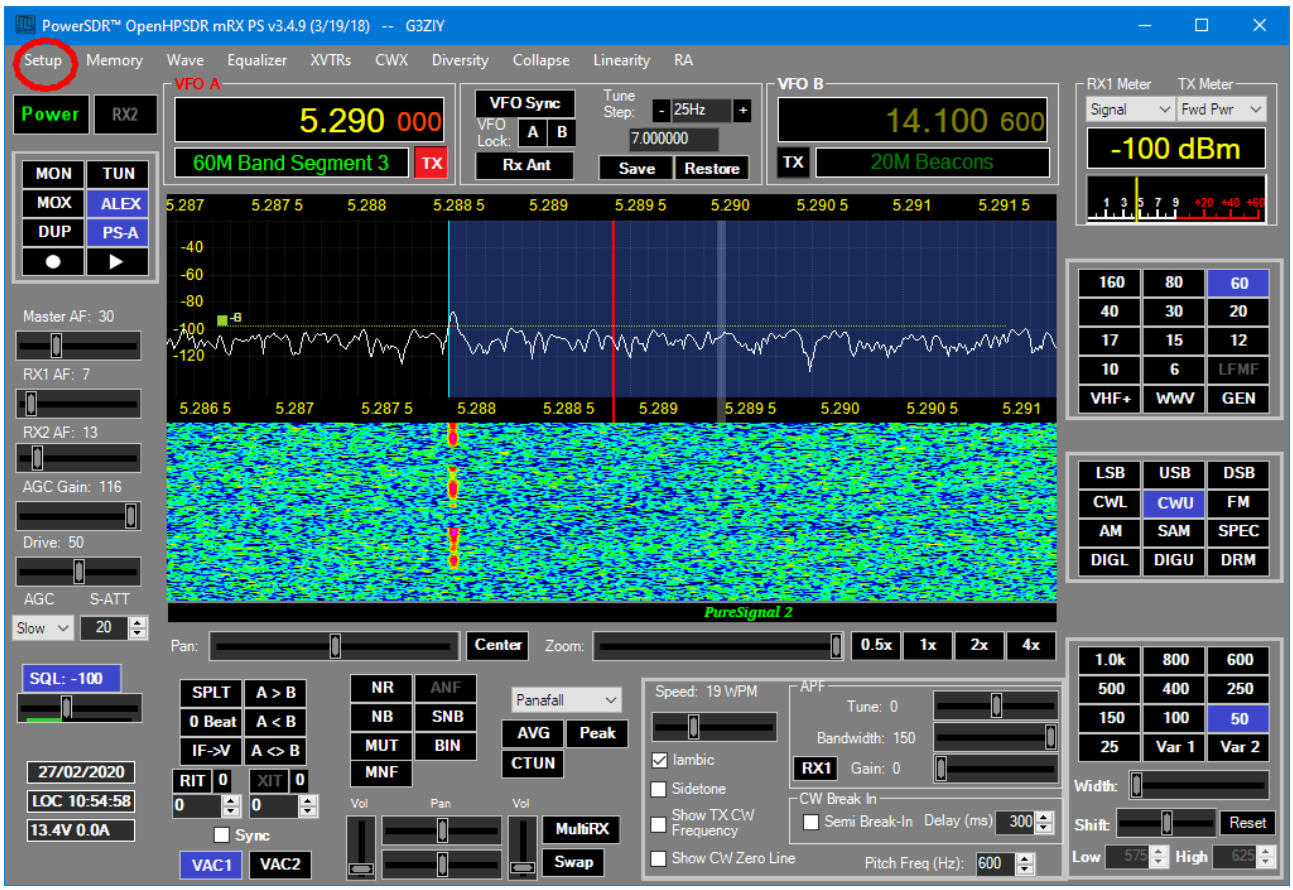
ANAN-7000DLE SDR (PowerSDR™ OpenHPSDR mRX PS)

By Richard - G3ZIY.

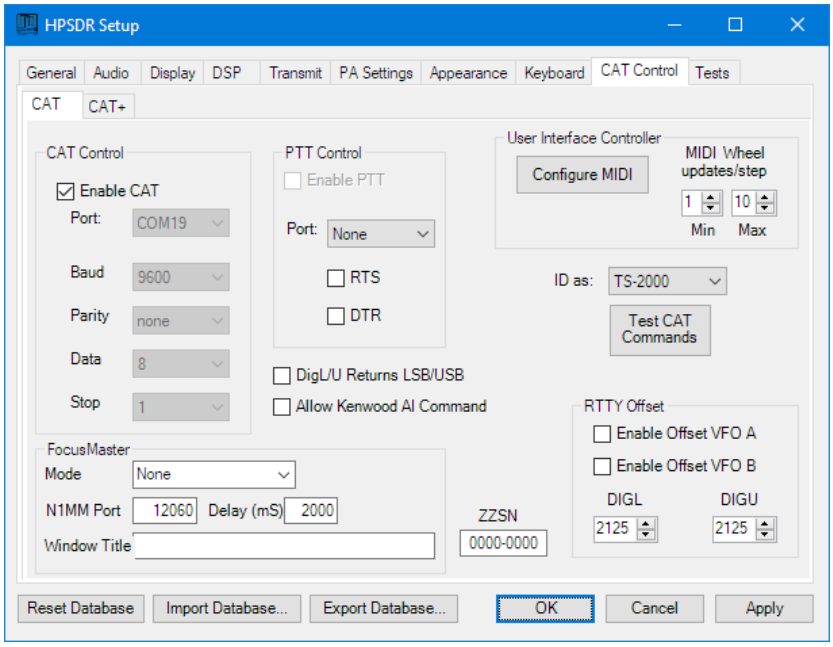
First install a virtual com port program, such as com0com. Set a pair of unused com ports, such as COM19 & COM20 shown here.



In the PowerSDR software select the Setup menu item (circled in red):

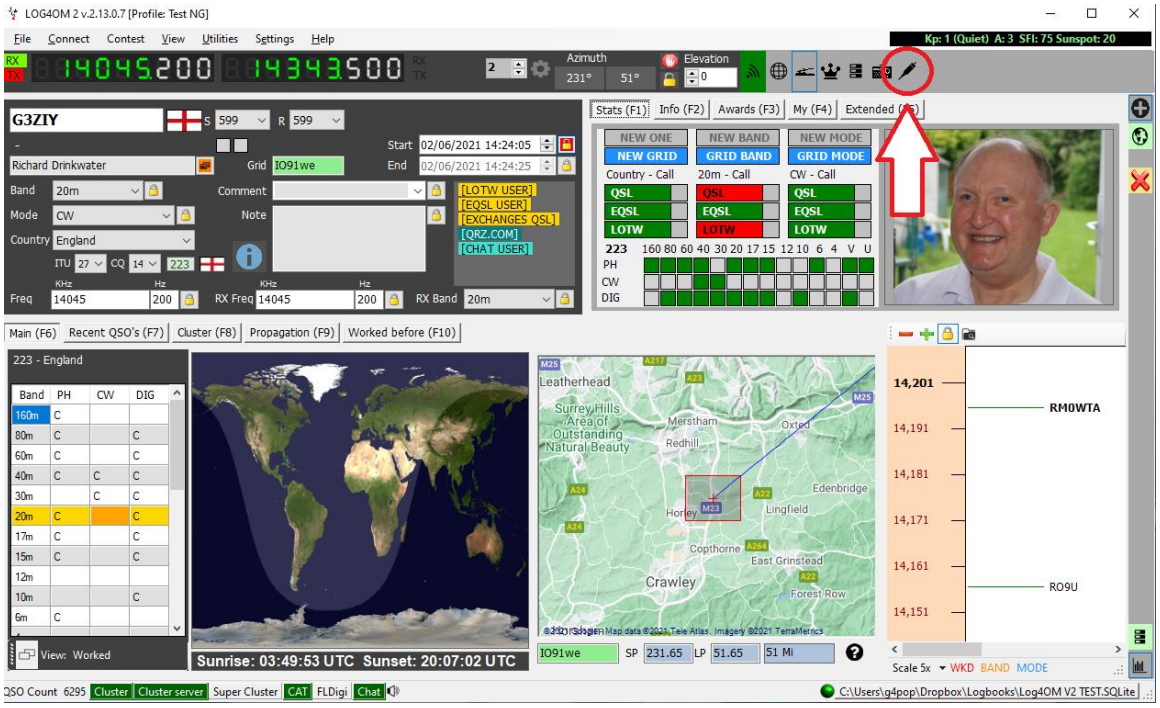


Select the CAT tab:

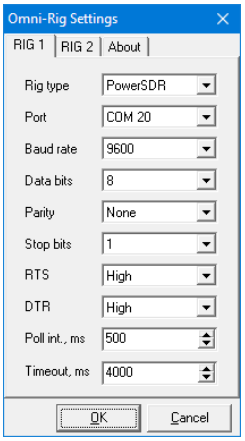


Choose one of the two ports you set up in the virtual com port program (COM19 in this case), and click enable and Apply.

In Log4OM select the CAT interface (circled in red):



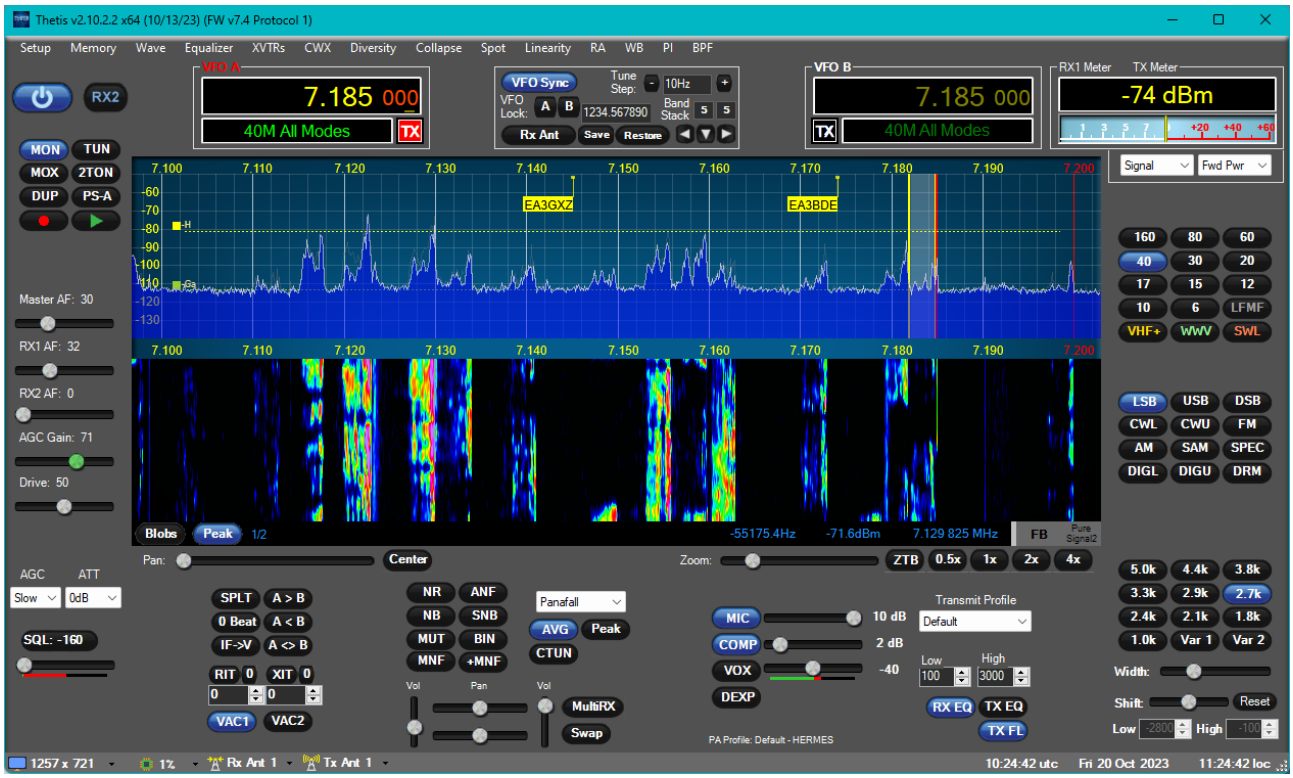
The Omnirig control panel will appear:



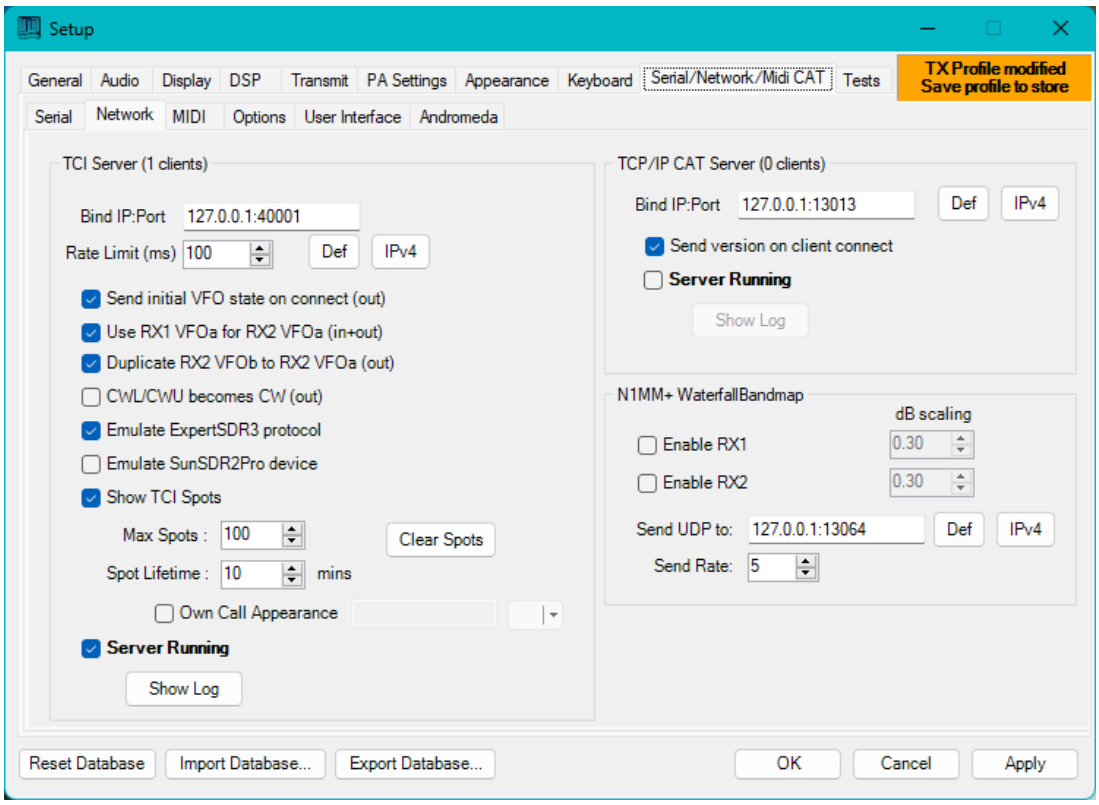
Set Rig1 or Rig2 as shown above, and OK it, and the current settings on the ANAN will be replicated on the Log4OM display. Changes of frequency on Log4OM will be replicated on the PowerSDR display, and vice-versa.

Thetis – Hermes Lite2 etc via TCI

The derivative of PowerSDR, Thetis now supports TCI control and interfaces with Log4OM easily.

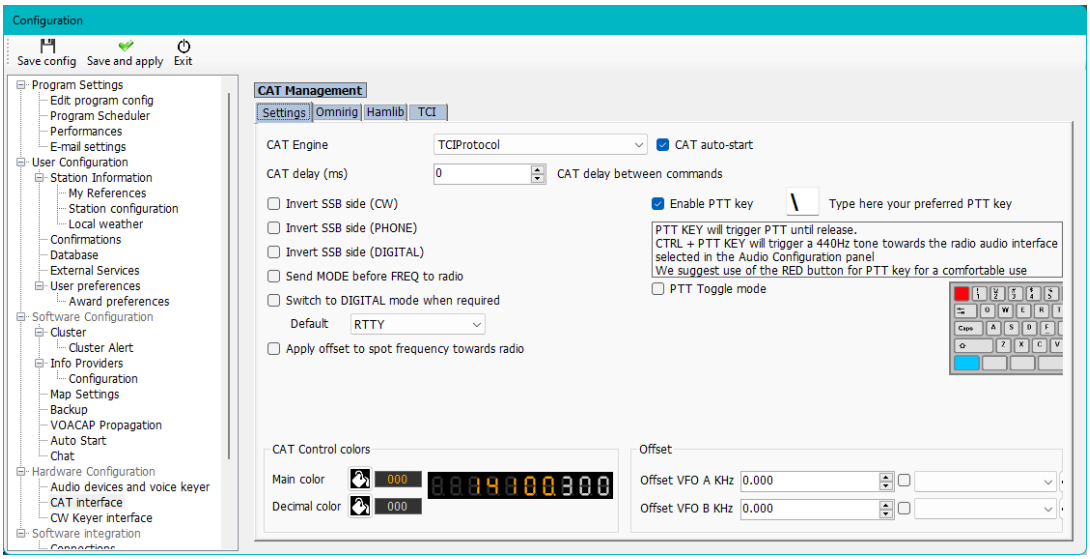


In the Setup/serial/network/Midi CAT tab select your Log4OM TCI settings (These must match)

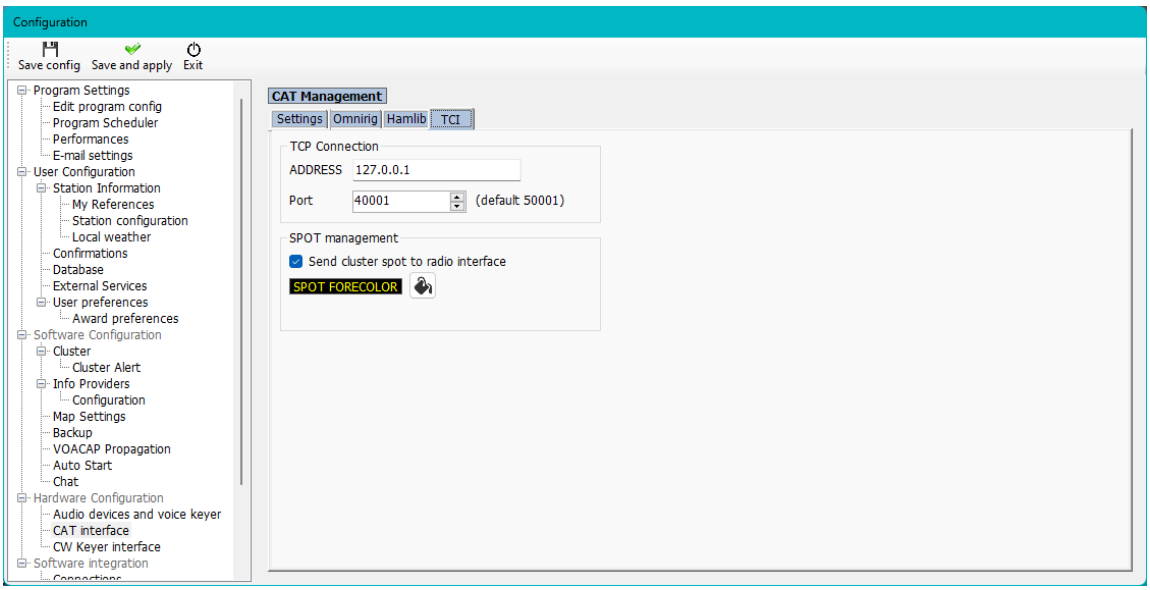


Click Apply then OK

In Log4OM settings/program configuration select the CAT Interface menu select TCI and auto start



Select the TCI tab of this menu and set the connection settings (Must match that in Thesis already set) and set spot management.

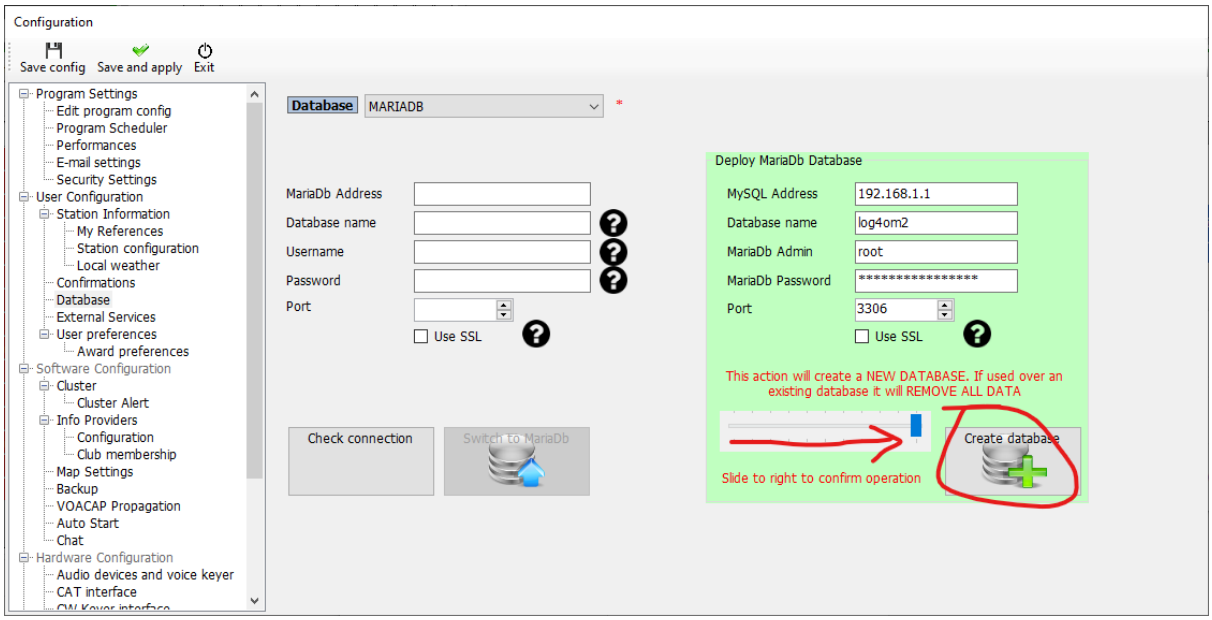


Restart both programs

- Log4OM will synchronise frequency and mode
- Clicking spots in Log4OM will cause Thetis to follow
- Clicking spots on the Thetis bandmap will add that call to the Log4OM input field for lookup and the frequency and mode will be synchronised in Log4OM

MariaDB Database setup

Written by SP5MTD



Setting up MariaDB / MySQL as QSO log storage in Log4OM

There is number of reasons one would want to use fully fledged database engine as a storage to log amateur radio QSOs. This article is showing step by step how to setup MariaDB (or MySQL) database and migrate existing QSO log in Log4OM – popular software for logging ham radio correspondence.

Why to bother?

For most cases, especially when used on single computer, the default SQLite is more than enough to handle any (reasonable) number of QSO you may want to store using Log4OM. Even tens of thousands of entries can be handled by SQLite.

However, there are cases when using “proper” database is a viable choice, in example:

- Handle logs from multiple Log4OM instances (including from different accounts on the same computer, or from different computers). Especially sharing SQLite database file using popular public cloud based services (like OneDrive, Google drive, Dropbox, etc.) may lead to data corruption. These services are not aware of SQLite state and may override its files in a wrong moment, or create file duplicates (i.e. when data file is modified on one computer, not synced, and modified again on different computer – in such a case network drive engine will have two versions of the file and will be unable to properly sync them).
- During amateur radio contests, to log all QSOs into one, centralised database, even from many contest radio stations in the same time.
- Already having up and running MariaDB/MySQL database engine, with good backup schema, running on reliable server. In such a case adding yet another database is simple and logical step.
- Access Log4OM database from remote places, i.e. during POTA activations. Remote access may be huge advantage, removing the need of consolidating QSO logs after returning to the base station. Remote connectivity may be not available everywhere however, as it will be relaying on the Internet access (assuming remote database is available as public cloud service or self-hosted and accessed by VPN).
- Because we can. Yeah, we geeks tend to treat this argument seriously :).

Whatever the reason to use fully fledged database to store Log4OM logs, you need to follow the below steps to set it up. In this tutorial I will be using MariaDB, but it will be virtually the same for MySQL.

Prerequisites

You need to have MariaDB or MySQL database engine installed. Database engine installation is out of scope of this document, however in its basic form it is a simple task. Most Linux distributions come with MariaDB / MySQL packages ready to install, on MaxOS X you can use Homebrew or MacPorts and on Microsoft Windows you need to download and install MSI package for x64 / x86 platforms (most PCs are x64 nowadays).

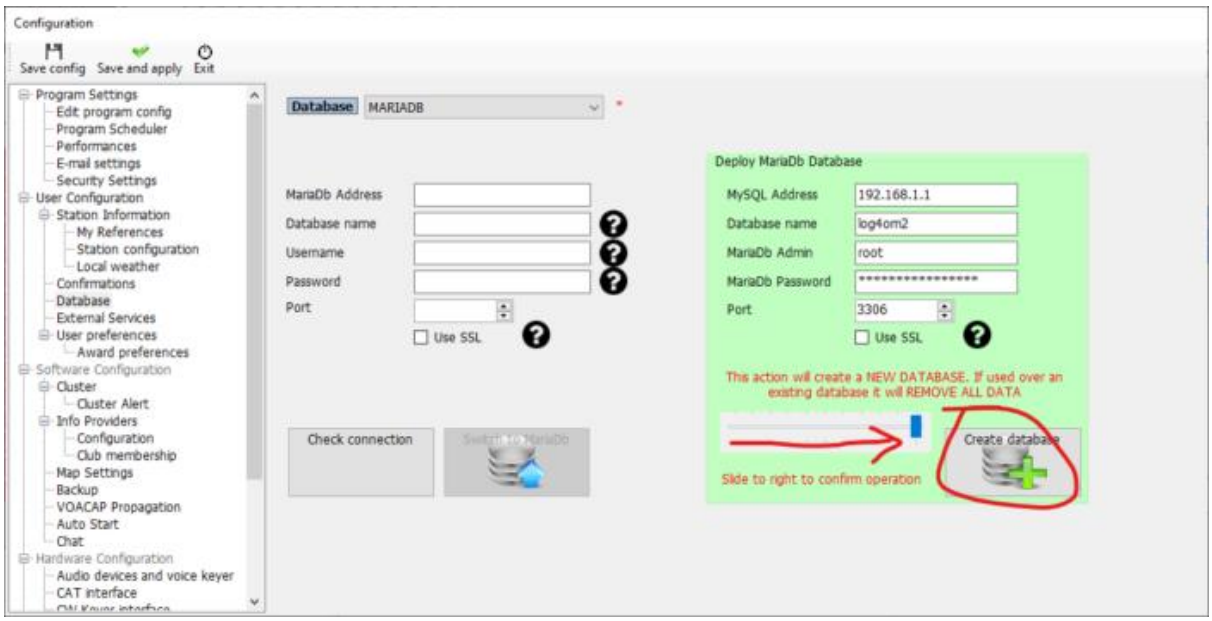
You will also need to know:

- Hostname or IP address of MariaDB / MySQL database server (if you use MariaDB as public cloud service you may need to contact your provider to get it)
- TCP port number of MariaDB / MySQL server (typically 3306)
- Database admin user credentials (by default the username is *root*, you need to know the password)
- MariaDB / MySQL client to connect to your database (needed for password change and/or troubleshooting)
- Telnet client (or other TCP connection checking tool; needed for troubleshooting only)

Database creation and connection

Log4OM, has you covered and has embedded mechanisms to create a database for you.

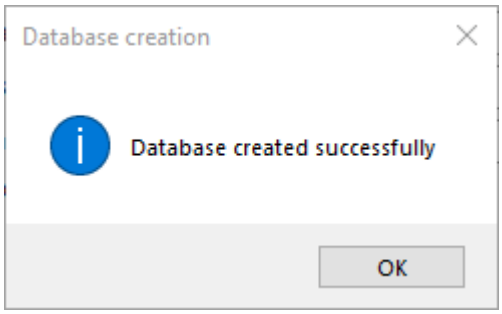
Go to *Menu -> Program Configuration -> User Configuration -> Database* and you should be able to see window like below, with quite self-explanatory fields that needs to be filled in:



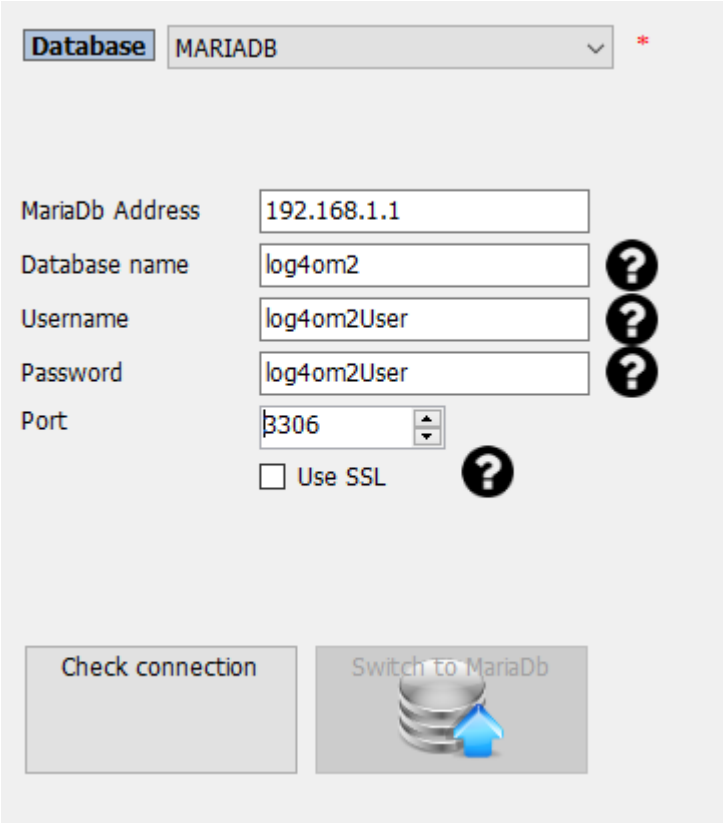
- MySQL / MariaDB Address: can be IP address or hostname of database server, here 192.168.1.1 as an example
- Database name: database to be created, default to *log4om2*
- MariaDB Admin: database user able to create new database, default to *root*
- MariaDB Password: password for admin *root* user
- Port: TCP port of database server, default to 3306
- Use SSL: tick if your server is using SSL/TSL encryption for connections (most modern packages have SSL pre-configured, so it should be fine and even recommended to check it in)

Once all fields are filled-in move the slider to the right and press “Create database” button. Please note that that will create new database of given name, and will overwrite all data in previous database, if a database of the same name would exist.

If everything will go as expected the below message should appear:



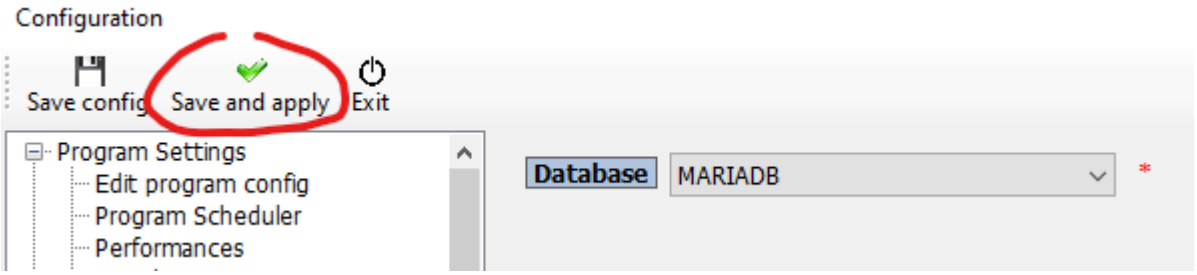
following by this screen:



At this stage you can press “Check connection” to finally confirm that everything works correctly. If so, button “Switch to MariaDB” button should become not-greyed.

Press “Switch to MariaDB” button to activate new database as a QSO log storage in Log4OM. Your previous QSO log is preserved though, so you can always switch back and forth (particularly useful to export precious data and import it into new database – see below about data migration).

Do not forget to save all changes by pressing “Save and apply” to save all settings and close configuration window.



At this point Log4OM is ready to use MariaDB or MySQL database as its QSO log storage. Actually also database user named “log4om2User” was created, with weak default password – the same as username. This is very wrong practice to use such a weak password, so we will change in a next step.

Default password change

As mentioned before default password created by Log4OM is very week and it should be changed. To do that you need to connect to MariaDB database using its native client, named simply *mariadb* (*mysql* for MySQL database). In Windows you need to open the Command Line (CMD), switch do the folder where MariaDB was installed (adding *\bin*) and execute the following command:

C:\>**cd "C:\Program Files\MariaDB 11.7\bin"**

C:\Program Files\MariaDB 11.7\bin>**mariadb --host 192.168.1.1 --port 3306 --user root --password**

Enter password: **********

The command on Linux and MacOS is the same, just you probably will not need to change directory first. Windows users, please note that my installation folder was *C:\Program Files**MariaDB 11.7**\bin*, as this is the version I was using at the time of writing the article. Yours may vary, so just check it out and correct accordingly.

If the connection will be successful you will be prompted for a password. Once successfully authenticated you will see screen similar to the below:

Welcome to the MariaDB monitor. Commands end with ; or \g.

Your MariaDB connection id is 20

Server version: 11.7.2-MariaDB-ubu2404 mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]>

Now you can issue SQL commands to the database (please refer to the below *Troubleshooting* section if your connection to database engine was unsuccessful).

To change the password to something more secure, issue the following command:

MariaDB [(none)]> **SET PASSWORD FOR 'log4om2User'@'%' = PASSWORD('qwerty');**

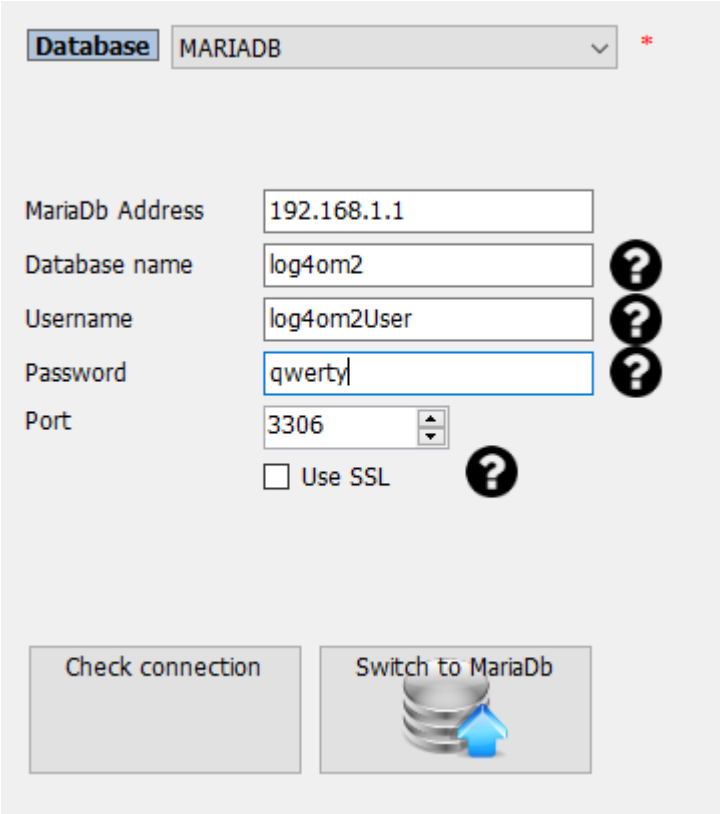
Query OK, 0 rows affected (0.005 sec)

As above, the answer should be “Query OK, 0 rows affected”.

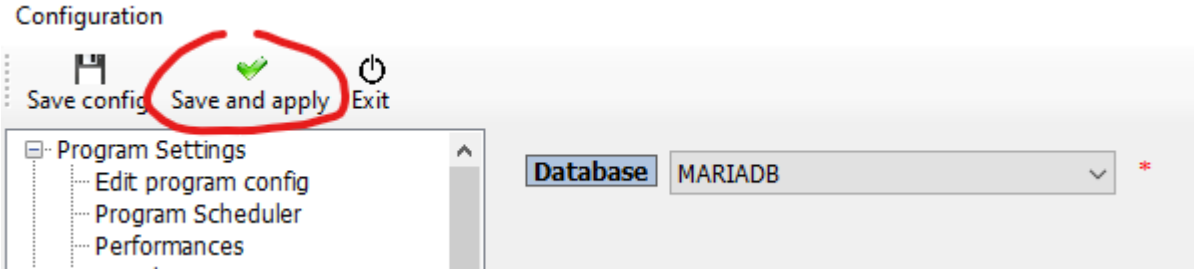
In this example I used password *qwerty* which obviously should be changed to something secure. Much more secure.

Note: if your database and Log4OM resides on the same computer, you may need to change *log4om2User@localhost* password as well.

Now you come back to Log4OM settings and change database logon credentials (password) to whatever you have just set as a new password:



The very final step is to press “Check connection” to confirm that everything still works correctly followed by “Switch to MariaDB”. Again, do not forget to save all changes by pressing “**Save and apply**” in the main configuration window.



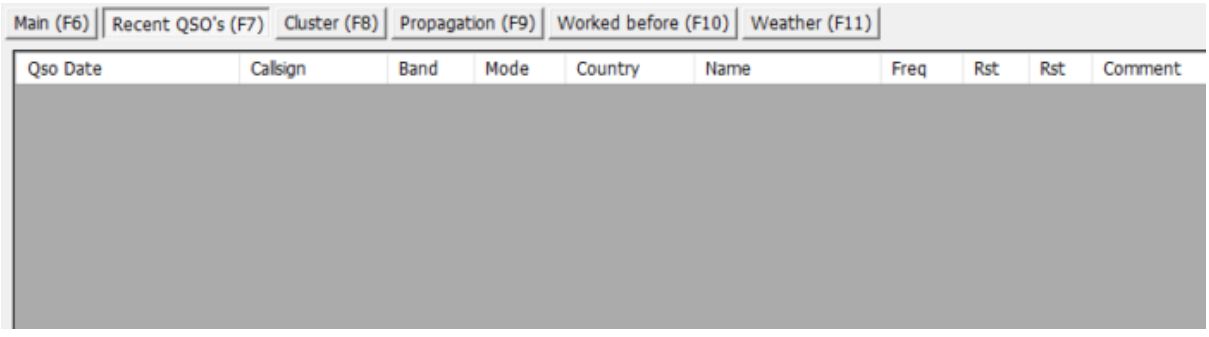
If you want to exit *mariadb* client you must issue *QUIT* command.

Please keep reading to find how to migrate QSO log from previous storage (SQLite), how to backup your MariaDB / MySQL database or how to troubleshoot database creation in case of any problems encountered in previous steps.

Existing SQL log (data) migration

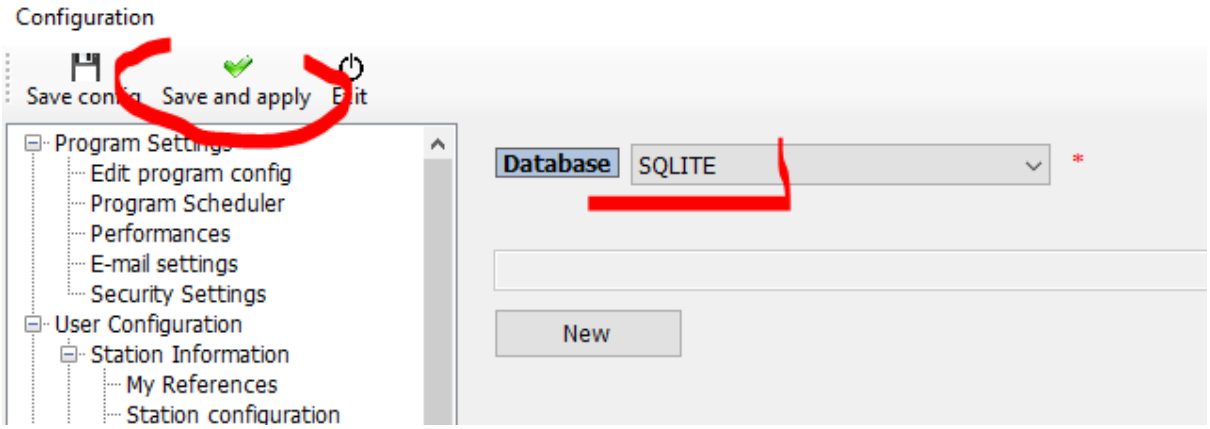
It is very likely that you started your Log4OM QSO log with SQLite. This is fine. It is very easy to migrate your existing SQLite database into your new, shiny MariaDB / MySQL instance.

Note that your QSO log *Recent QSO’s (F7)* tab in Log4OM is now empty:



This is normal, as we have just created and switched to brand new (and empty) MariaDB database. We need to switch it back to SQLite, where all previous information resides.

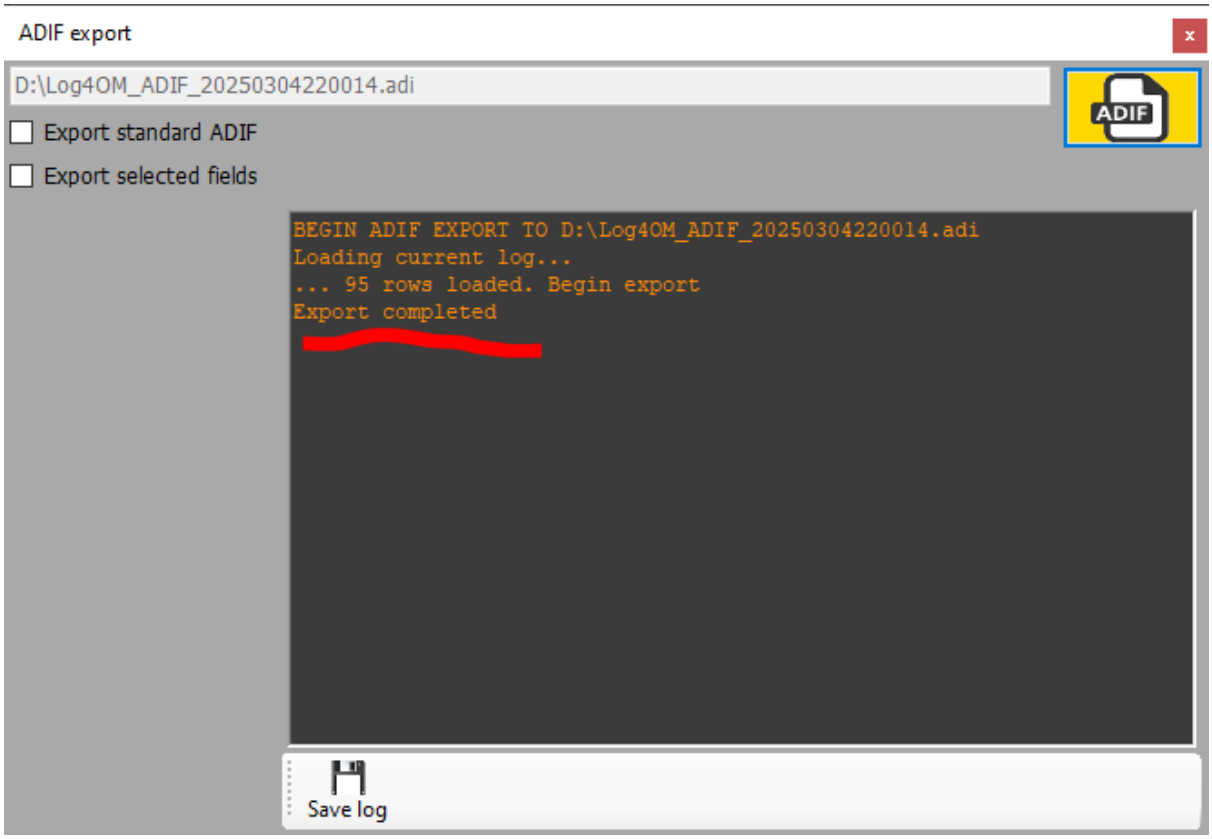
Go to *Menu -> Settings -> Program Configuration -> User Configuration -> Database*. Select SQLite, as it was before. Click “Save and apply”:



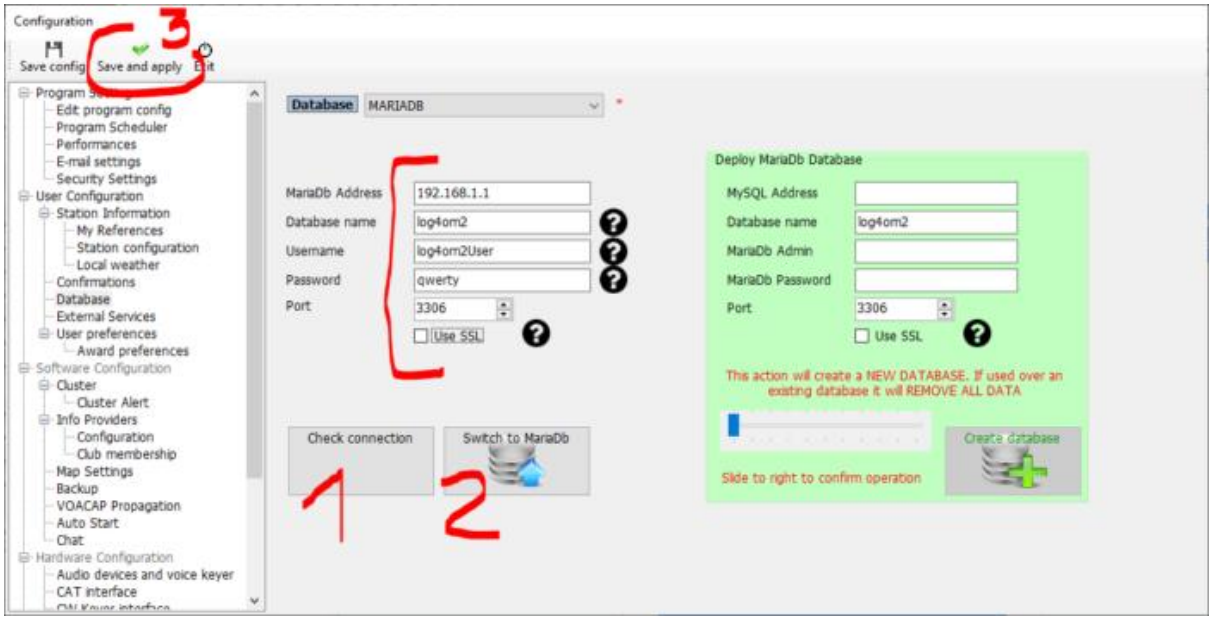
Note that Log4OM log under *Recent QSO’s (F7)* tab has now all your previous QSO’s back.

Select *Menu -> File -> Export ADIF*. The below windows will appear. Do not check “Export standard ADIF” nor “Export selected fields. Click “ADIF” on yellow background:

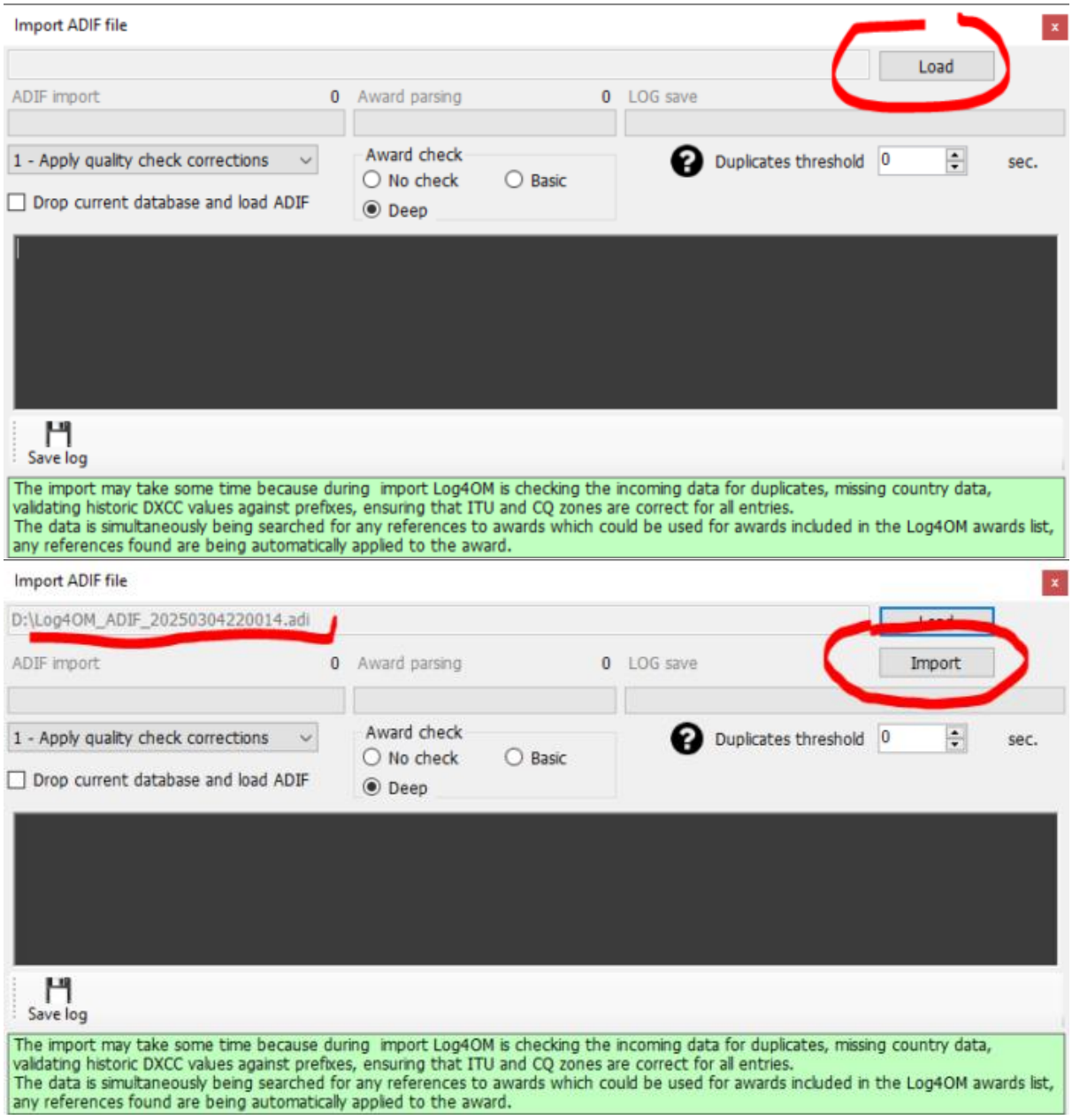
Choose any folder to save your export ADI file. Desktop will be just fine. This ADI file will contain all QSO entries from SQLite database. Export may take some time if your SQL log is large. Once export is completed it will look like this:



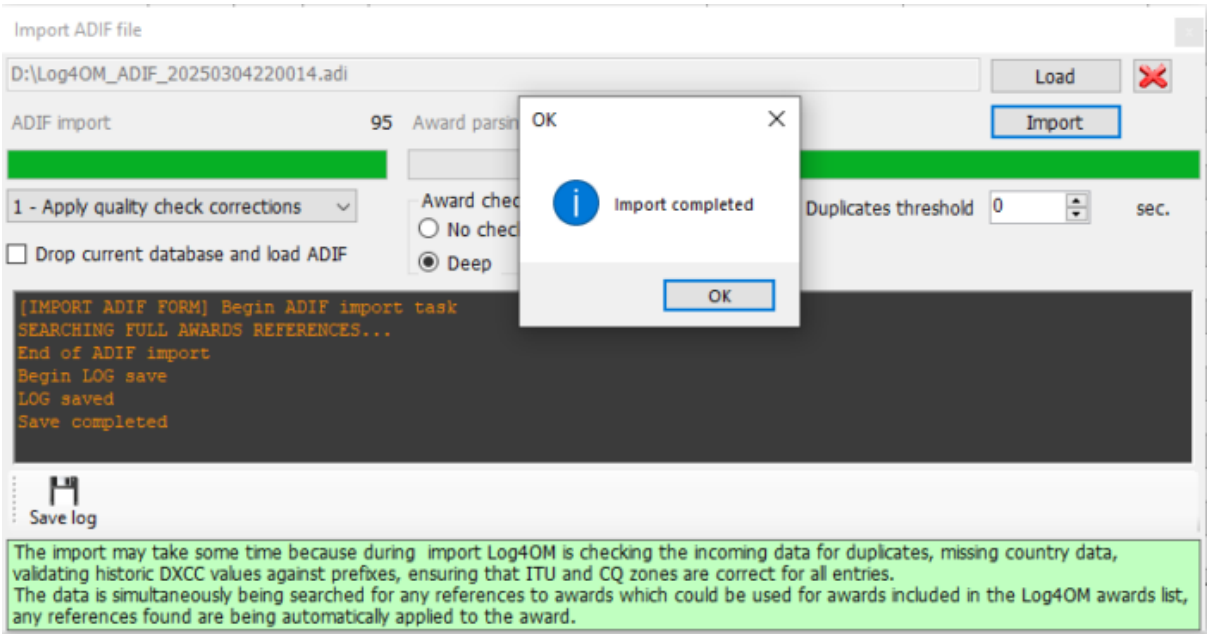
Now switch back to your newly created MariaDB / MySQL database engine. Open database configuration dialogue again. Enter all required database information (address, name, username, password, port, use SSL if needed). Click “Check connection”, followed by “Switch to MariaDB” and “Save and apply”:



Log4OM log under *Recent QSO’s (F7)* tab is empty again. We will now import all your logs into new MariaDB / MySQL database. Go to *Menu -> File -> Import ADIF*. The below windows will appear. Click “Load” and select previously exported ADI file, then click “Import” to begin import process:



The import may take several minutes, depending on your log. Be patient. At the end it should look similar to this:



You may want to save and review import log. But as this is straight forward export / import there should be no errors.

Now it is the time to start enjoying your new MariaDB / MySQL database with all history in it :).

Database backup

Real men do not use backups. Well, if this is your approach you may skip this section. All the rest please feel free to keep reading :).

Good news is that MariaDB / MySQL backups are very easy to do. As with database client, there is a dedicated command line tool for it. Here is an example for Windows, but of course it will be the same under Linux / MacOS:

C:\>**cd "C:\Program Files\MariaDB 11.7\bin"**

C:\Program Files\MariaDB 11.7\bin>**mariadb-dump --opt --host=192.168.1.1 --port=3306 --user=root --password log4om2 > D:\log4om2_backup.sql**

Enter password: **********

C:\Program Files\MariaDB 11.7\bin>

The above command will connect to database named *log4om2* on host *192.168.1.1* and TCP port *3306*, using *root* superuser credentials (you need to provide *root* password when prompted). After running *mariadb-dump* it seems like nothing has happened, but the database was backed-up to a file, in my case *D:\log4om2_backup.sql*.

(please note that all *mariadb-dump –opt … >D:\log4om2_backup.sql* command is a single command, one line)

This is how the backup file should look like when opened with any text editor (like Notepad in case of Windows):

/*M!999999\- enable the sandbox mode */

-- MariaDB dump 10.19-11.7.2-MariaDB, for Win64 (AMD64)

--

-- Host: 192.168.1.1 Database: log4om2

-- --

-- Server version 11.7.2-MariaDB-ubu2404

/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;

/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;

/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;

/*!40101 SET NAMES utf8mb4 */;

/*!40103 SET @OLD_TIME_ZONE=@@TIME_ZONE */;

/*!40103 SET TIME_ZONE='+00:00' */;

/*!40014 SET @OLD_UNIQUE_CHECKS=@@UNIQUE_CHECKS, UNIQUE_CHECKS=0 */;

/*!40014 SET @OLD_FOREIGN_KEY_CHECKS=@@FOREIGN_KEY_CHECKS, FOREIGN_KEY_CHECKS=0 */;

/*!40101 SET @OLD_SQL_MODE=@@SQL_MODE, SQL_MODE='NO_AUTO_VALUE_ON_ZERO' */;

/*M!100616 SET @OLD_NOTE_VERBOSITY=@@NOTE_VERBOSITY, NOTE_VERBOSITY=0 */;

... MANY MORE LINES HERE ...

Compress (zip) this file if you want and keep it in a safe location, preferably other than database server.

You may want to automate *mariadb-dump* process so it runs automatically, i.e. on daily basics. But this is out of scope of this article.

Troubleshooting

Network connectivity

In case Log4OM is unable to create MariaDB / MySQL database the very first thing to check is network connectivity. Database server in its default configuration is listening on TCP port 3306. If there is no connectivity to this port from computer running Log4OM to the database server, Log4OM will be unable to co issue any commands to the database.

The easiest way to check connectivity is to use Telnet and try to connect to server hostname or IP address on port 3306 (or other if your database is using non-standard configuration).

Telnet is a build-in tool in any Linux and MacOS X. It is not standard in Windows 10/11 though. It must be turned on via “Windows Features” of Windows Control Panel (search Internet for “enable telnet on windows 10 or 11” if in doubt).

Assuming your MariaDB / MySQL database server IP is 192.168.1.1 the command to run on the computer running Log4OM should be (you should run it from the command line):

telnet 192.168.1.1 3306

In case of success you will get message similar to the below:

Connected to 192.168.1.1.

Escape character is '^]'.

Z

11.7.2-MariaDB-ubu2404.pjF[wev?=A#'8'V^UnLojmysql_native_password**Connection closed by foreign host**.

Otherwise telnet will not be able to connect:

Connecting To 192.168.1.1…**Could not open connection to the host, on port 3306: Connect failed**

If you get *Connection failed* or similar message there is no chance for Log4OM to connect to the database.

There are number of reasons why you may be getting *Connection failed* messages:

- MariaDB / MySQL is not listening on a host (database server) and port you are trying to connect
- There is no routing between Log4OM computer and the database server
- There are firewall rules limiting network traffic (network firewall on a way, local firewall on database server or Log4OM computer, or both)
- Many other things

Whatever the reason you MUST sort it out before trying anything else. Telnet test must be successful. It makes no sense to try any other solutions before correcting network connectivity.

Remote root access

Some databases are configured in a way, that root access is allowed only locally, not from remote computers. In that case you need to connect to the database locally and enable remote root access.

To check if root can connect from any remote computers, you need to connect to the database (as described above, using mariadb / mysql client). Once connected this command will show what root can

MariaDB [(none)]> SELECT user,host FROM mysql.user WHERE user='root';

+------+-----------+

| User | Host |

+------+-----------+

| root | % | **<--- this row must exist! it allows root to logon from any host, not only from localhost**

| root | localhost |

+------+-----------+

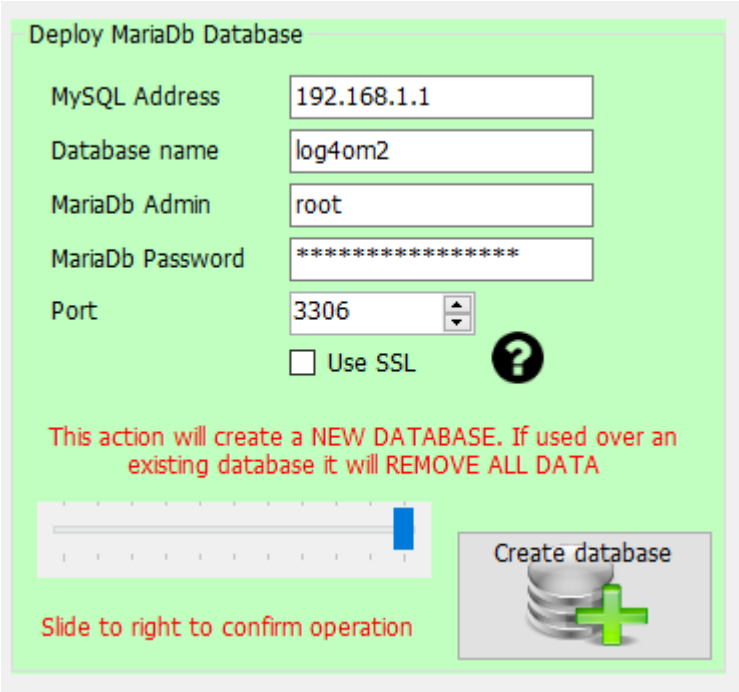
2 rows in set (0.005 sec)

If the only entry corresponding to root account is the one with “localhost” you need to allow remote access. This is done by adding root@% entry into mysql.user table (sign “%” means “all hosts”, including remote).

MariaDB [(none)]> **GRANT ALL PRIVILEGES ON *.* TO 'root'@'%' IDENTIFIED BY 'qwerty' WITH GRANT OPTION;**

MariaDB [(none)]> **FLUSH PRIVILEGES;**

Again, replace “qwerty” with some strong password. This is the password you can then use in the “Deploy MariaDB Database” form:



Other issues

There are many other potential problems preventing Log4OM from deploying and using external MariaDB / MySQL database. This article is not intended to be a comprehensive database troubleshooting guide. Good practice is to focus on one thing at a time, sort out basic things first (like network connectivity), analyze logs, increase debug levels as needed, etc.

Successful deployment

The below commands and outputs from mariadb / mysql client should give you an idea how properly deployed Log4OM database could look like:

MariaDB [(none)]> **SHOW DATABASES;**

+--------------------+

| Database |

+--------------------+

| information_schema |

| log4om2 |

| mysql |

| performance_schema |

| sys |

+--------------------+

6 rows in set (0.005 sec)

MariaDB [(none)]> **SELECT user,host FROM mysql.user;**

+-------------+-----------+

| User | Host |

```
+-------------+-----------+
| log4om2User | %         |
| root        | %         |
| healthcheck | 127.0.0.1 |
| healthcheck | ::1       |
| healthcheck | localhost |
| log4om2User | localhost |
| mariadb.sys | localhost |
| root        | localhost |
+-------------+-----------+
9 rows in set (0.014 sec)
```

MariaDB [(none)]> **SHOW GRANTS FOR log4om2User;**

```
+-----------------------------------------------------------------------------------------------------------+
| Grants for log4om2User@%                                                                                  |
+-----------------------------------------------------------------------------------------------------------+
| GRANT USAGE ON *.* TO `log4om2User`@`%` IDENTIFIED BY PASSWORD
'*15C156E72F0B7B7904E71D36823F99964EDF138F' |
| GRANT SELECT, INSERT, UPDATE, DELETE, INDEX ON `log4om2`.`log` TO `log4om2User`@`%`                       |
| GRANT SELECT, INSERT, UPDATE, DELETE, INDEX ON `log4om2`.`informations` TO `log4om2User`@`%`              |
+-----------------------------------------------------------------------------------------------------------+
3 rows in set (0.003 sec)
```

Final word

I hope this article will help you setting up MariaDB or MySQL as a storage for Log4OM QSO log. At the moment of writing this article I was using Log4OM wersion 2.35.1.9 and MariaDB 11.7.2. Some things may change with time, but I hope I gave you a general idea how to proceed, even if some changes will actually occur.

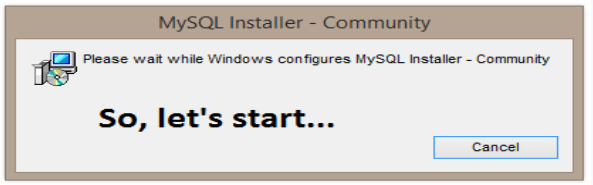
Please note all the above comes with no warranty. Existing SQLite database should not be altered at all during the migration procedure. However it is a good practice to execute proper backup before starting any work (proper meaning as stated in Log4OM User Manual)

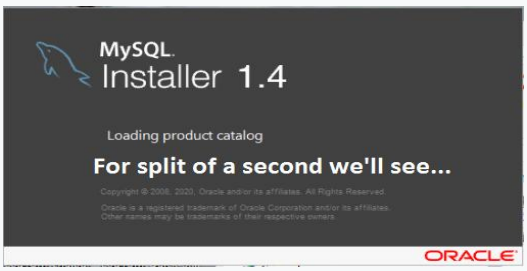
Installing MySQL-8.0.20 with Log4OM Version 2 by Tom – SP2L

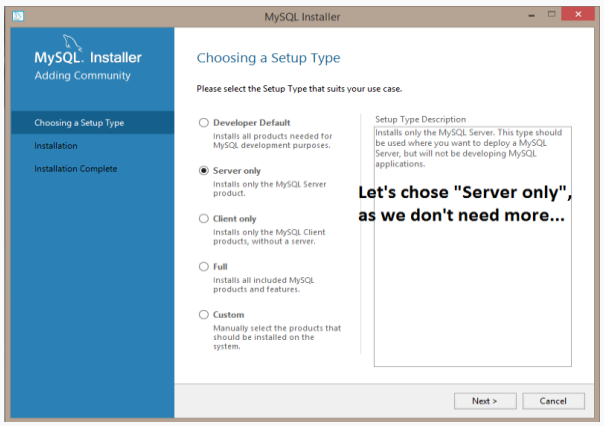
To download the MySQL Installer – Community Oracle Corporation 1.4.33.0 Go to: https://dev.mysql.com/downloads/installer/ choose: Windows (x86, 32-bit), MSI Installer 8.0.20 420.6M Download (mysql-installer-community-8.0.20.0.msi)

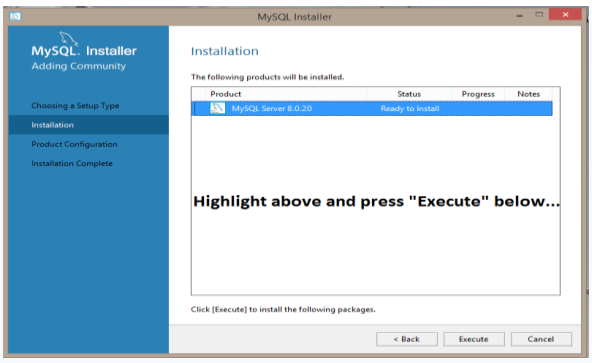
On next screen: https://dev.mysql.com/downloads/file/?id=495322 choose: No thanks, just start my download. Download should begin shortly: mysql-installer-community-8.0.20.0.msi 421MB Start installation...

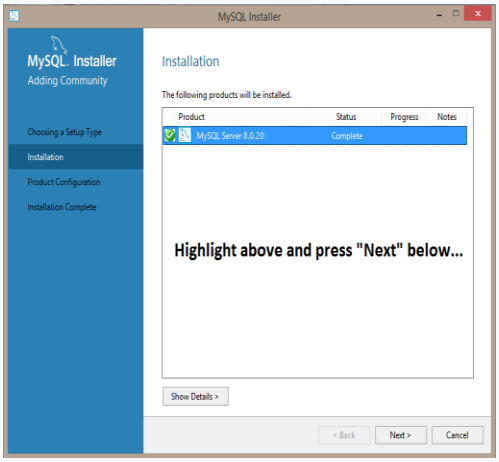
Next steps are shown on consecutive pictures:

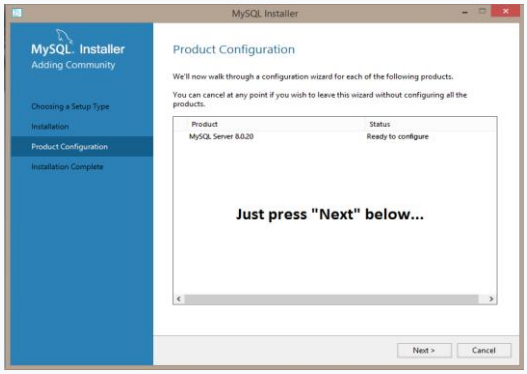


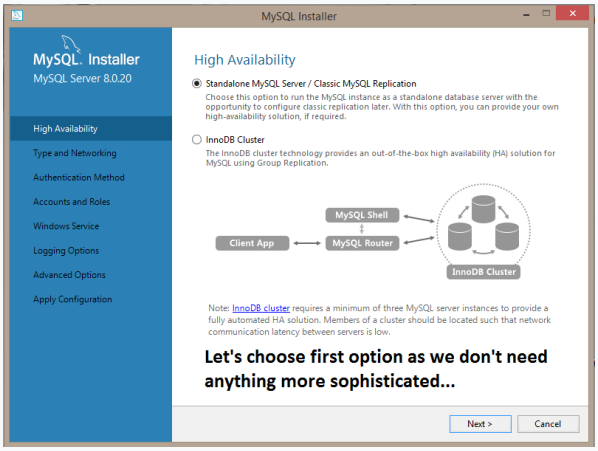


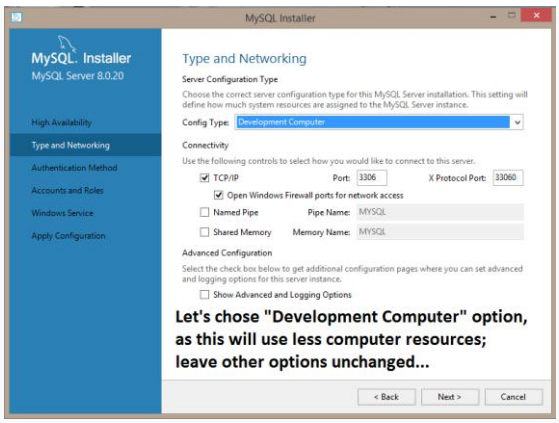


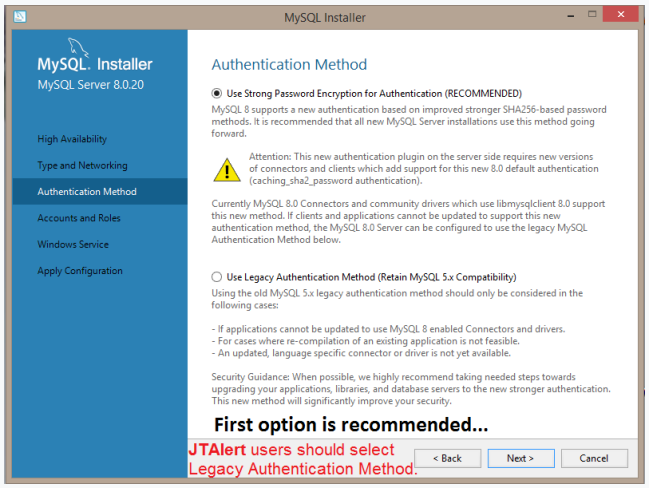

MySQL Installer
MySQL. Installer
Adding Community
Choosing a Setup Type
Installation
Product Configuration
Installation Complete
Installation
The following products will be installed.
Product
Status
Progress
Notes
MySQL Server 8.0.20
Ready to Install
Highlight above and press "Execute" below...
Click [Execute] to install the following packages.
< Back
Execute
Cancel

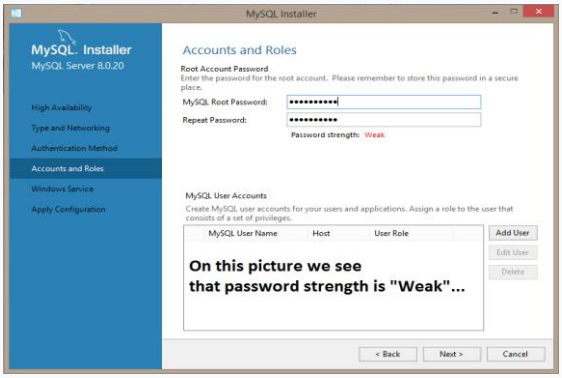

MySQL Installer
MySQL. Installer
Adding Community
Choosing a Setup Type
Installation
Product Configuration
Installation Complete
Installation
The following products will be installed.
Product
Status
Progress
Notes
MySQL Server 8.0.20
Complete
Highlight above and press "Next" below...
Show Details >
< Back
Next >
Cancel

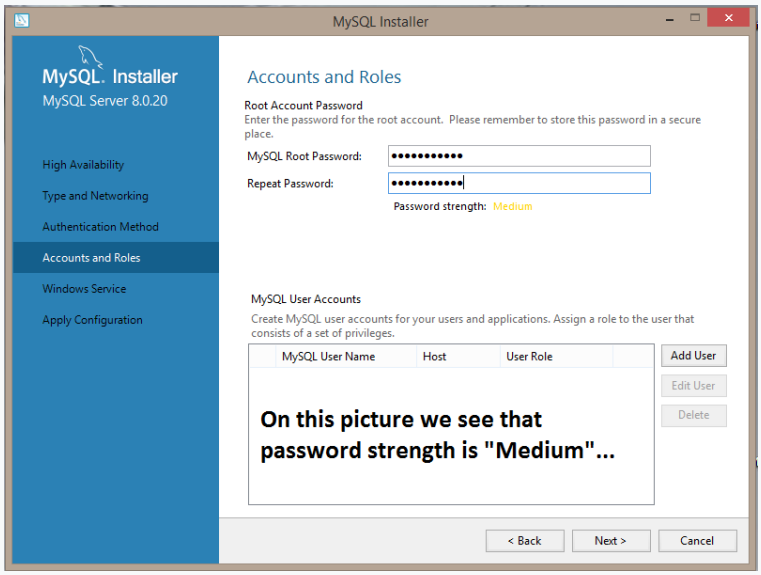

MySQL Installer
MySQL. Installer
Adding Community
Choosing a Setup Type
Installation
Product Configuration
Installation Complete
Product Configuration
We'll now walk through a configuration wizard for each of the following products.
You can cancel at any point if you wish to leave this wizard without configuring all the products.
Product
Status
MySQL Server 8.0.20
Ready to configure
Just press "Next" below...
Next >
Cancel

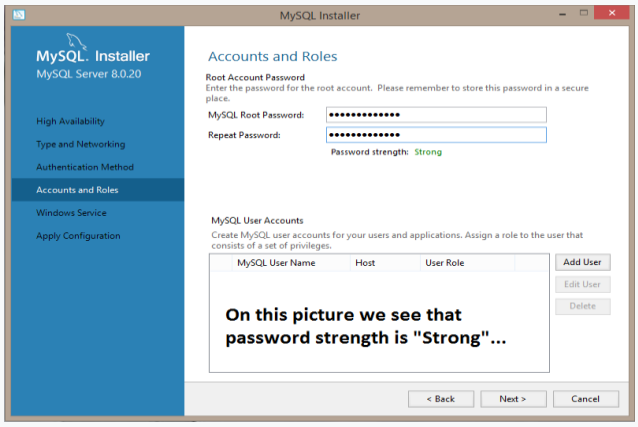

MySQL Installer
MySQL. Installer
MySQL Server 8.0.20
High Availability
Type and Networking
Authentication Method
Accounts and Roles
Windows Service
Logging Options
Advanced Options
Apply Configuration
High Availability
Standalone MySQL Server / Classic MySQL Replication
Choose this option to run the MySQL instance as a standalone database server with the opportunity to configure classic replication later. With this option, you can provide your own high-availability solution, if required.
InnoDB Cluster
The InnoDB cluster technology provides an out-of-the-box high availability (HA) solution for MySQL using Group Replication.
MySQL Shell
Client App
MySQL Router
InnoDB Cluster
Note: InnoDB cluster requires a minimum of three MySQL server instances to provide a fully automated HA solution. Members of a cluster should be located such that network communication latency between servers is low.
Let's choose first option as we don't need anything more sophisticated...
Next >
Cancel

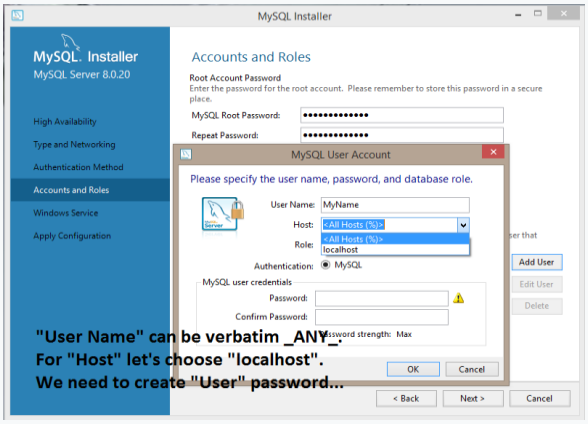

MySQL Installer
MySQL. Installer
MySQL Server 8.0.20
High Availability
Type and Networking
Authentication Method
Accounts and Roles
Windows Service
Apply Configuration
Type and Networking
Server Configuration Type
Choose the correct server configuration type for this MySQL Server installation. This setting will define how much system resources are assigned to the MySQL Server instance.
Config Type: Development Computer
Connectivity
Use the following controls to select how you would like to connect to this server.
TCP/IP
Port: 3306
X Protocol Port: 33060
Open Windows Firewall ports for network access
Named Pipe
Pipe Name: MYSQL
Shared Memory
Memory Name: MYSQL
Advanced Configuration
Select the check box below to get additional configuration pages where you can set advanced and logging options for this server instance.
Show Advanced and Logging Options
Let's chose "Development Computer" option, as this will use less computer resources; leave other options unchanged...
< Back
Next >
Cancel

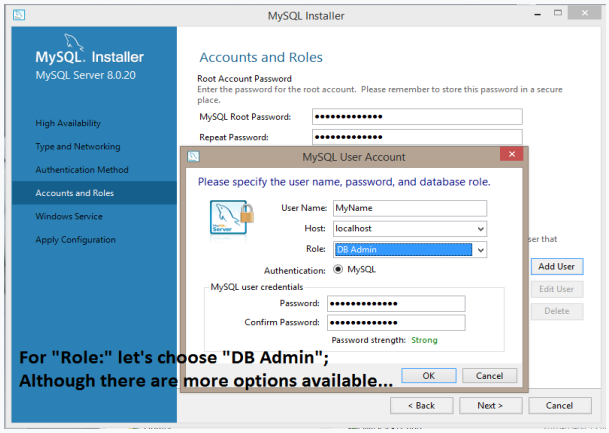

MySQL Installer
MySQL. Installer
MySQL Server 8.0.20
High Availability
Type and Networking
Authentication Method
Accounts and Roles
Windows Service
Apply Configuration
Authentication Method
Use Strong Password Encryption for Authentication (RECOMMENDED)
MySQL 8 supports a new authentication based on improved stronger SHA256-based password methods. It is recommended that all new MySQL Server installations use this method going forward.
Attention: This new authentication plugin on the server side requires new versions of connectors and clients which add support for this new 8.0 default authentication (caching_sha2_password authentication).
Currently MySQL 8.0 Connectors and community drivers which use libmysqlclient 8.0 support this new method. If clients and applications cannot be updated to support this new authentication method, the MySQL 8.0 Server can be configured to use the legacy MySQL Authentication Method below.
Use Legacy Authentication Method (Retain MySQL 5.x Compatibility)
Using the old MySQL 5.x legacy authentication method should only be considered in the following cases:
- If applications cannot be updated to use MySQL 8 enabled Connectors and drivers.
- For cases where re-compilation of an existing application is not feasible.
- An updated, language specific connector or driver is not yet available.
Security Guidance: When possible, we highly recommend taking needed steps towards upgrading your applications, libraries, and database servers to the new stronger authentication. This new method will significantly improve your security.
First option is recommended...
JTAlert users should select Legacy Authentication Method.
< Back
Next >
Cancel

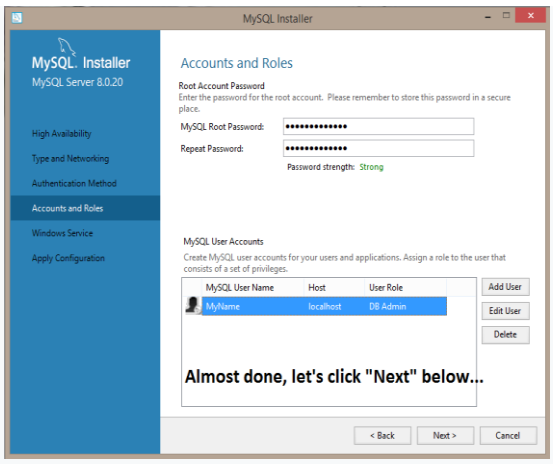

MySQL Installer
MySQL. Installer
MySQL Server 8.0.20
High Availability
Type and Networking
Authentication Method
Accounts and Roles
Windows Service
Apply Configuration
Accounts and Roles
Root Account Password
Enter the password for the root account. Please remember to store this password in a secure place.
MySQL Root Password:
Repeat Password:
Password strength: Weak
MySQL User Accounts
Create MySQL user accounts for your users and applications. Assign a role to the user that consists of a set of privileges.
MySQL User Name
Host
User Role
Add User
Edit User
Delete
On this picture we see that password strength is "Weak"...
< Back
Next >
Cancel

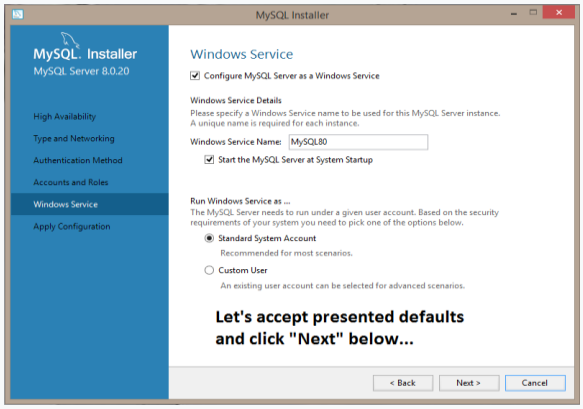

MySQL Installer
MySQL. Installer
MySQL Server 8.0.20
High Availability
Type and Networking
Authentication Method
Accounts and Roles
Windows Service
Apply Configuration
Accounts and Roles
Root Account Password
Enter the password for the root account. Please remember to store this password in a secure place.
MySQL Root Password:
Repeat Password:
Password strength: Medium
MySQL User Accounts
Create MySQL user accounts for your users and applications. Assign a role to the user that consists of a set of privileges.
MySQL User Name
Host
User Role
Add User
Edit User
Delete
On this picture we see that password strength is "Medium"...
< Back
Next >
Cancel

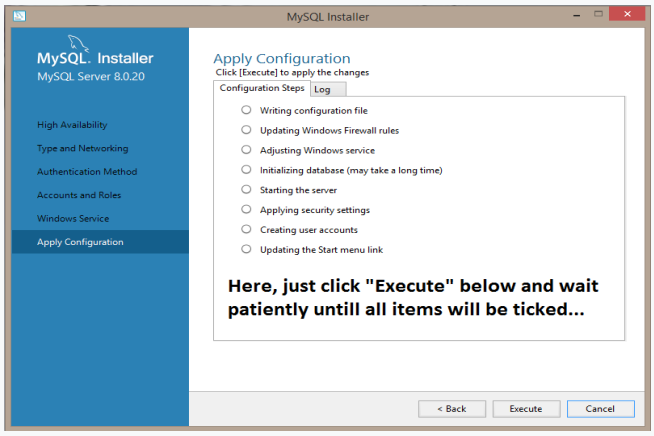

MySQL Installer
MySQL. Installer
MySQL Server 8.0.20
High Availability
Type and Networking
Authentication Method
Accounts and Roles
Windows Service
Apply Configuration
Accounts and Roles
Root Account Password
Enter the password for the root account. Please remember to store this password in a secure place.
MySQL Root Password:
Repeat Password:
Password strength: Strong
MySQL User Accounts
Create MySQL user accounts for your users and applications. Assign a role to the user that consists of a set of privileges.
MySQL User Name
Host
User Role
Add User
Edit User
Delete
On this picture we see that password strength is "Strong"...
< Back
Next >
Cancel

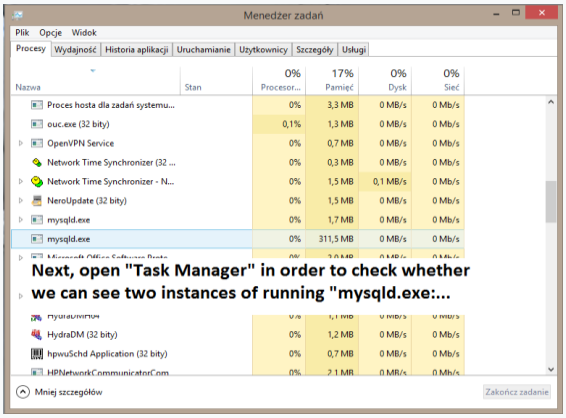

MySQL Installer
MySQL. Installer
MySQL Server 8.0.20
Accounts and Roles
MySQL User Account
Please specify the user name, password, and database role.
User Name: MyName
Host: <All Hosts (%)>
localhost
Role:
Authentication: MySQL
MySQL user credentials
Password:
Confirm Password:
"User Name" can be verbatim _ANY_.
For "Host" let's choose "localhost".
We need to create "User" password...
OK
Cancel
< Back
Next >
Cancel

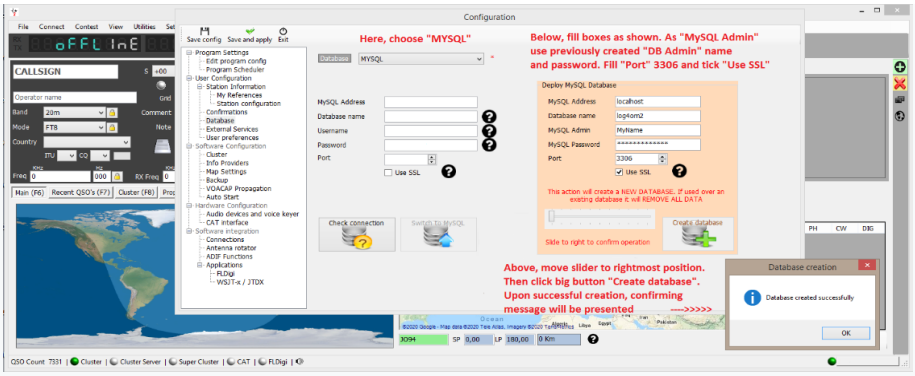

MySQL Installer
MySQL. Installer
MySQL Server 8.0.20
Accounts and Roles
MySQL User Account
Please specify the user name, password, and database role.
User Name: MyName
Host: localhost
Role: DB Admin
Authentication: MySQL
MySQL user credentials
Password:
Confirm Password:
Password strength: Strong
For "Role:" let's choose "DB Admin";
Although there are more options available...
OK
Cancel
< Back
Next >
Cancel

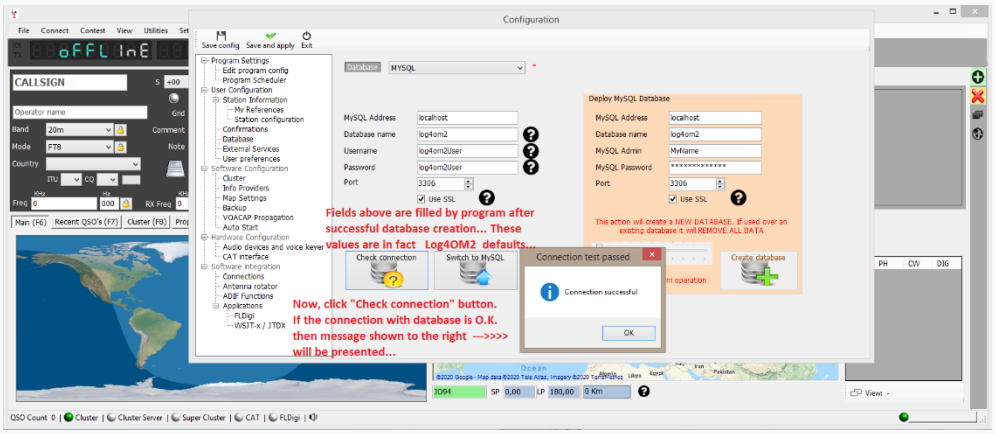

MySQL Installer
MySQL. Installer
MySQL Server 8.0.20
High Availability
Type and Networking
Authentication Method
Accounts and Roles
Windows Service
Apply Configuration
Accounts and Roles
Root Account Password
Enter the password for the root account. Please remember to store this password in a secure place.
MySQL Root Password:
Repeat Password:
Password strength: Strong
MySQL User Accounts
Create MySQL user accounts for your users and applications. Assign a role to the user that consists of a set of privileges.
MySQL User Name
Host
User Role
MyName
localhost
DB Admin
Add User
Edit User
Delete
Almost done, let's click "Next" below...
< Back
Next >
Cancel

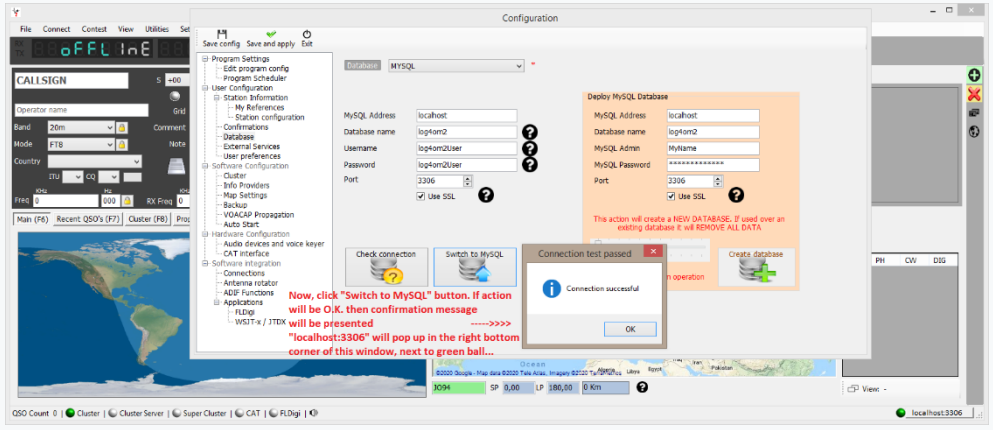

MySQL Installer
MySQL. Installer
MySQL Server 8.0.20
High Availability
Type and Networking
Authentication Method
Accounts and Roles
Windows Service
Apply Configuration
Windows Service
Configure MySQL Server as a Windows Service
Windows Service Details
Please specify a Windows Service name to be used for this MySQL Server instance. A unique name is required for each instance.
Windows Service Name:
MySQL80
Start the MySQL Server at System Startup
Run Windows Service as ...
The MySQL Server needs to run under a given user account. Based on the security requirements of your system you need to pick one of the options below.
Standard System Account
Recommended for most scenarios.
Custom User
An existing user account can be selected for advanced scenarios.
Let's accept presented defaults and click "Next" below...
< Back
Next >
Cancel

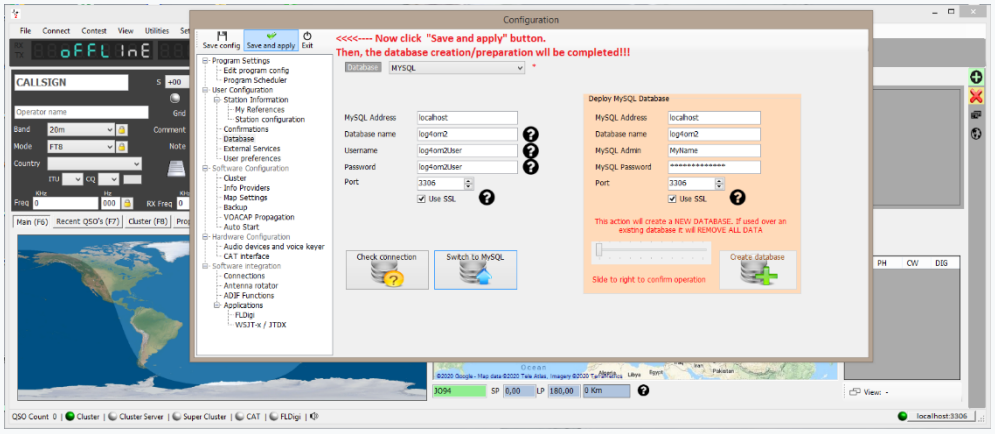

MySQL Installer
MySQL. Installer
MySQL Server 8.0.20
High Availability
Type and Networking
Authentication Method
Accounts and Roles
Windows Service
Apply Configuration
Apply Configuration
Click [Execute] to apply the changes
Configuration Steps
Log
Writing configuration file
Updating Windows Firewall rules
Adjusting Windows service
Initializing database (may take a long time)
Starting the server
Applying security settings
Creating user accounts
Updating the Start menu link
Here, just click "Execute" below and wait patiently untill all items will be ticked...
< Back
Execute
Cancel

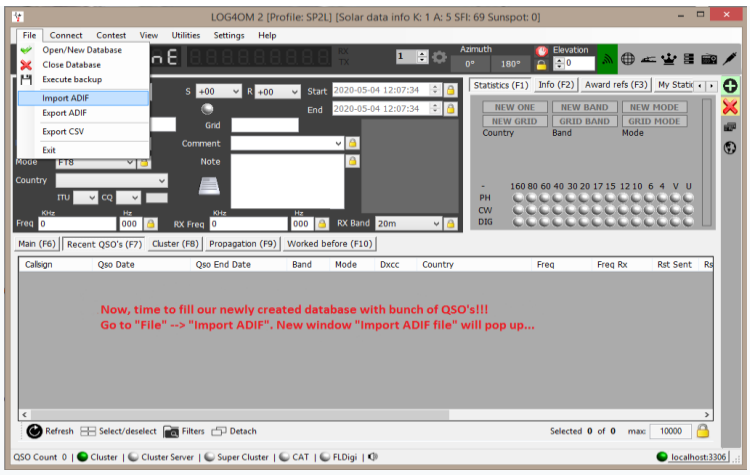

Menedżer zadań
Plik
Opcje
Widok
Procesy
Wydajność
Historia aplikacji
Uruchamianie
Użytkownicy
Szczegóły
Usługi
Nazwa
Stan
0%
Procesor...
17%
Pamięć
0%
Dysk
0%
Sieć
Proces hosta dla zadań systemu...
0%
3,3 MB
0 MB/s
0 Mb/s
ouc.exe (32 bity)
0,1%
1,3 MB
0 MB/s
0 Mb/s
OpenVPN Service
0%
0,7 MB
0 MB/s
0 Mb/s
Network Time Synchronizer (32 ...
0%
0,3 MB
0 MB/s
0 Mb/s
Network Time Synchronizer - N...
0%
1,5 MB
0,1 MB/s
0 Mb/s
NeroUpdate (32 bity)
0%
1,5 MB
0 MB/s
0 Mb/s
mysqld.exe
0%
1,7 MB
0 MB/s
0 Mb/s
mysqld.exe
0%
311,5 MB
0 MB/s
0 Mb/s
Next, open "Task Manager" in order to check whether we can see two instances of running "mysqld.exe:...
HydraDM (32 bity)
0%
1,2 MB
0 MB/s
0 Mb/s
hpwuSchd Application (32 bity)
0%
0,7 MB
0 MB/s
0 Mb/s
Mniej szczegółów
Zakończ zadanie

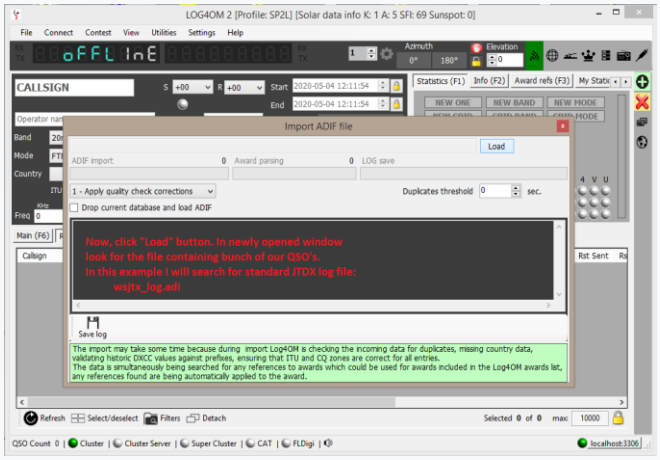

Configuration
Here, choose "MYSQL"
Below, fill boxes as shown. As "MySQL Admin" use previously created "DB Admin" name and password. Fill "Port" 3306 and tick "Use SSL"
Above, move slider to rightmost position. Then click big button "Create database". Upon successful creation, confirming message will be presented ---->>>>>
Database creation
Database created successfully
OK

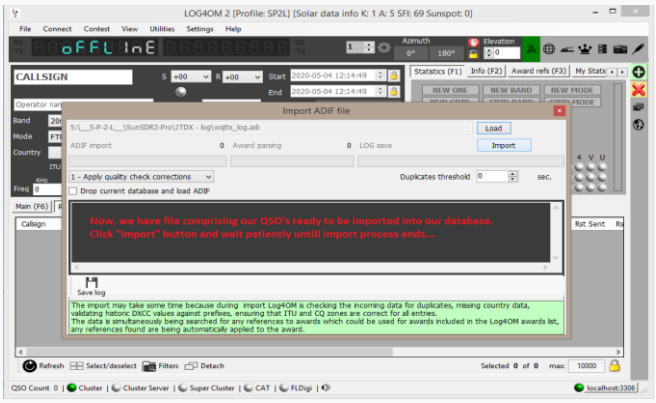

Configuration
Fields above are filled by program after successful database creation... These values are in fact Log4OM2 defaults...
Now, click "Check connection" button. If the connection with database is O.K. then message shown to the right ---->>>> will be presented...
Connection test passed
Connection successful
OK

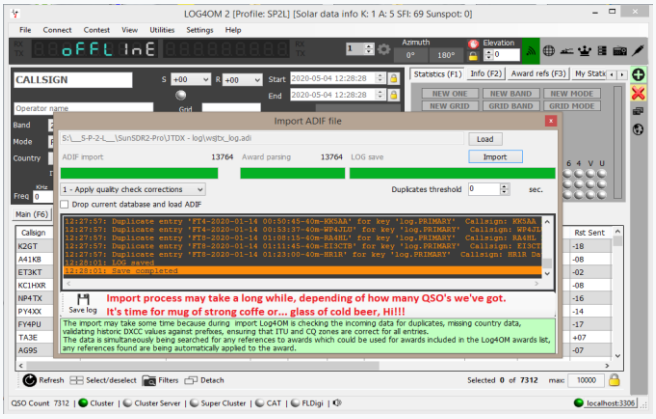

Configuration
Now, click "Switch to MySQL" button. If action will be O.K. then confirmation message will be presented ---->>>>
"localhost:3306" will pop up in the right bottom corner of this window, next to green ball...
Connection test passed
Connection successful
OK

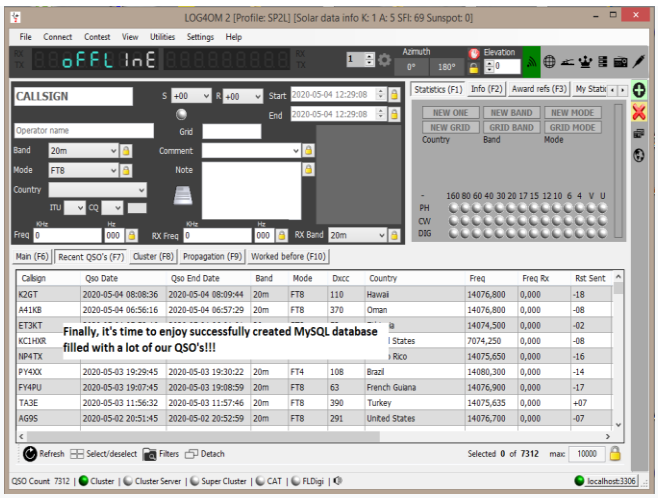

Configuration
<<<<---- Now click "Save and apply" button.
Then, the database creation/preparation wil be completed!!!


LOG4OM 2 [Profile: SP2L] [Solar data info K: 1 A: 5 SFI: 69 Sunspot: 0]
File Connect Contest View Utilities Settings Help
Open/New Database
Close Database
Execute backup
Import ADIF
Export ADIF
Export CSV
Exit
Now, time to fill our newly created database with bunch of QSO's!!!
Go to "File" --> "Import ADIF". New window "Import ADIF file" will pop up...


LOG4OM 2 [Profile: SP2L] [Solar data info K: 1 A: 5 SFI: 69 Sunspot: 0]
Import ADIF file
Load
Now, click "Load" button. In newly opened window
look for the file containing bunch of our QSO's.
In this example I will search for standard JTDX log file:
wsjtx_log.adi


LOG4OM 2 [Profile: SP2L] [Solar data info K: 1 A: 5 SFI: 69 Sunspot: 0]
Import ADIF file
Load
Import
Now, we have file comprising our QSO's ready to be imported into our database.
Click "import" button and wait patiently until import process ends...


LOG4OM 2 [Profile: SP2L] [Solar data info K: 1 A: 5 SFI: 69 Sunspot: 0]
Import ADIF file
Load
Import
Import process may take a long while, depending of how many QSO's we've got.
It's time for mug of strong coffe or... glass of cold beer, Hi!!!



Now make a backup of the QSO's database, just in case! This task is not complicated at all and step by step described below, there are just few commands to execute.

1.Open CLI, so called Command Line, either looking for appropriate shortcut or by going to left bottom corner „Start" and typing „cmd.exe", then on top of opened window right click on „cmd.exe" in order to run this command with administrative privileges.

2.In newly opened CLI window type: cd "C:\Program Files\MySQL\MySQL Server 8.0\bin\" (Above assumes that MySQL was installed in standard location!)

3.Now we are in new location: C:\Program Files\MySQL\MySQL Server 8.0\bin> and there we issue command with following template syntax: mysqldump -u[username]-p[password]-h[hostname][database name] > C:\[filename].sql In our case it will be: mysqldump –ulog4om2User –plog4om2User –hlocalhost log4om2 > C:\log4om2-backup.sql

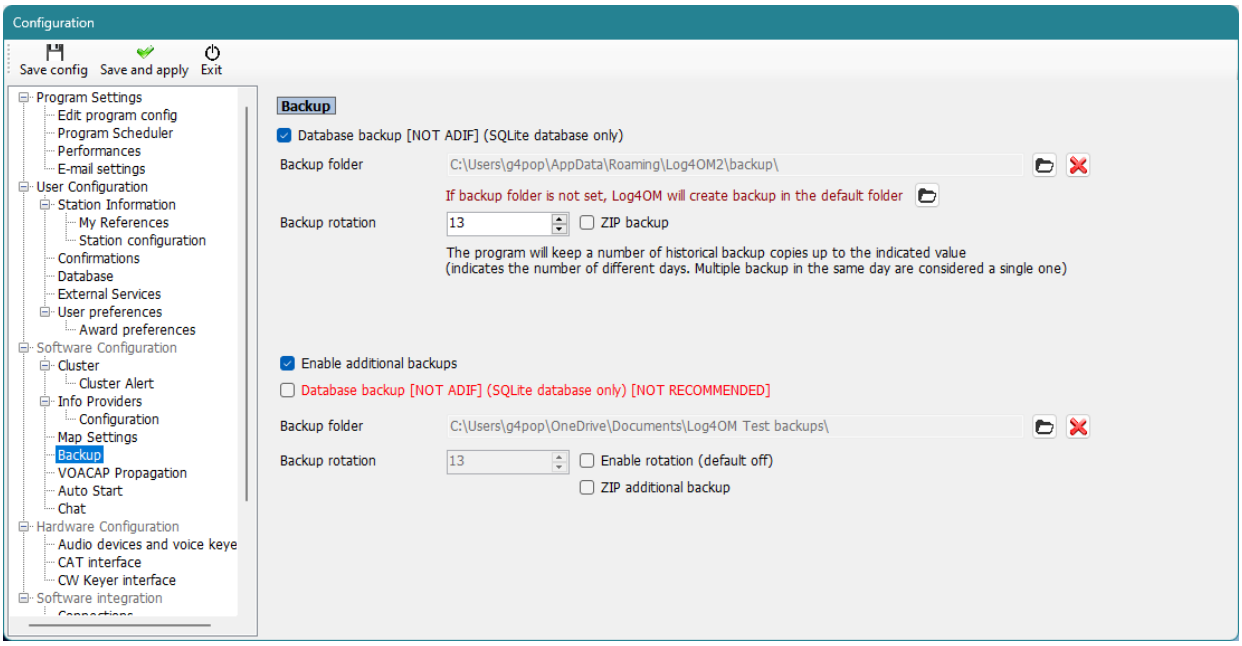
PLEASE NOTE, above three directives are written without spaces between preceding switch and the value itself, although all of them can be separated: -ulog4om2User equals to -u log4om2User -plog4om2User equals to -p log4om2User -hlocalhost equals to -h localhost Resulting file log4om2-backup.sql can be used to recover from disaster or when in need to deploy log4om2 database on a remote server.

Enjoy! Best regards. Tom – SP2L

Emergencies

Restoring Log4OM after a crash or failure.

Backup files are saved every time Log4OM is closed providing the user has selected that function in the settings/Program configuration menu as shown below.



It is advisable to set two different backup locations, one preferably on a cloud storage like Google Drive or Dropbox

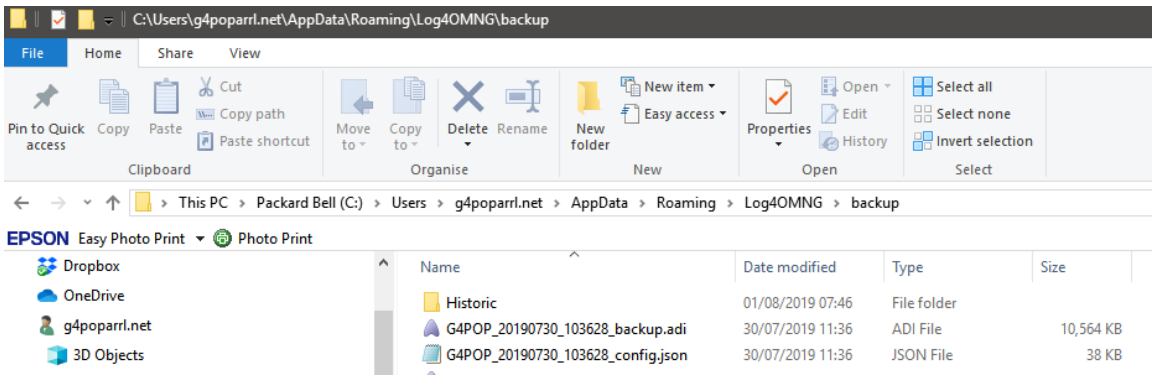
The backup files contain copies of the following critical files.

- SQLite file of the database
- ADIF file of the database if secondary backup is set
- Main Configuration file

The files are saved in a default folder at:

C:\Users\YOUR USERNAME\AppData\Roaming\Log4OM2\Backup or any other location set in the Program Config/Backup menu

(NOTE: If the AppData folder cannot be found it may be 'Hidden' try 'Show hidden files and folders' from the Windows Options/view menu)



If no backup has been set.

There is a 'Historic' file that saves the previous months set up files to ensure that the bulk of date is preserved and only the time elapsing from the end of the previous month saved is lost.

The 'Historic' files are saved to:
C:\Users\YOUR USER NAME\AppData\Roaming\LogOM2\Backup\historic

To restore a configuration.

- Copy the LATEST configuration backup file which is normally identified by the users call sign followed by the date and time of the backup - e.g. G4POP_20200311_181527_config.json To the C:\Users\USERS NAME\AppData\Roaming\Log4OM2\user folder.

- Once the file is copied to that folder delete the existing config.json file and rename the backup file to config.json all settings will be restored when Log4OM is next started.

To recover a database in case of corruption

Either

1. Copy the Backup SQLite file to a convenient location
2. Go to file/Open new database menu and select the SQLite file above as detailed elsewhere in this user guide.

or

1. In Log4OM go to the file/Open new database menu and create a new database as detailed elsewhere in this user guide.
2. Go to File/Import ADIF file and import the last ADIF backup file (ADIF import is detailed earlier in this user guide)

Moving the database to a different cloud storage

Users often have issues when storing their database files on OneDrive we think due to Windows changing security settings without notice.

Log4OM recommend Dropbox (DB) or Google Drive (GD) as reliable alternative cloud storage providers to use these the owner must download and install DB or GD on their PC

1. Make a folder on the google drive of the PC named 'Log4OM Data'
2. Find the logbook SQLite file on the PC (Lower right of Log4OM screen shows where it is and the name)
3. COPY that file to the Log4OM Data folder you created earlier - Don't 'Move' or 'CUT & Pate' only copy to ensure original is not lost
4. In Log4OM use File/Open/new database then click 'Open'
5. Navigate to the Log4OM Data folder in the google drive and select the SQLite file that was copied.
6. Click OK, OK again then Save& Apply

If the SQLite database is shared by multiple computers, then all computers must have the same type of cloud storage installed and the user should follow steps 4 – 6 above on each computer.

Transferring Log4OM set up to another PC

1. Download and install the latest Log4OM release to the new PC

   a. Install Omnirig 1.2 during the Log4OM set up (Check the box for Omnirig)
   b. Let Log4OM install to the default locations, not to the C drive

2. Start Log4OM and when prompted insert the call sign and locator in the Station info menu, click save & apply and close Log4OM (Ignore the database menu for now)

3. Copy all of the files from the old PC located here

   C:\Users\YOUR USER NAME\AppData\Roaming\Log4OM2\user
   (This folder contains the config.json required and also files with a file name starting with 'Layout_.....')

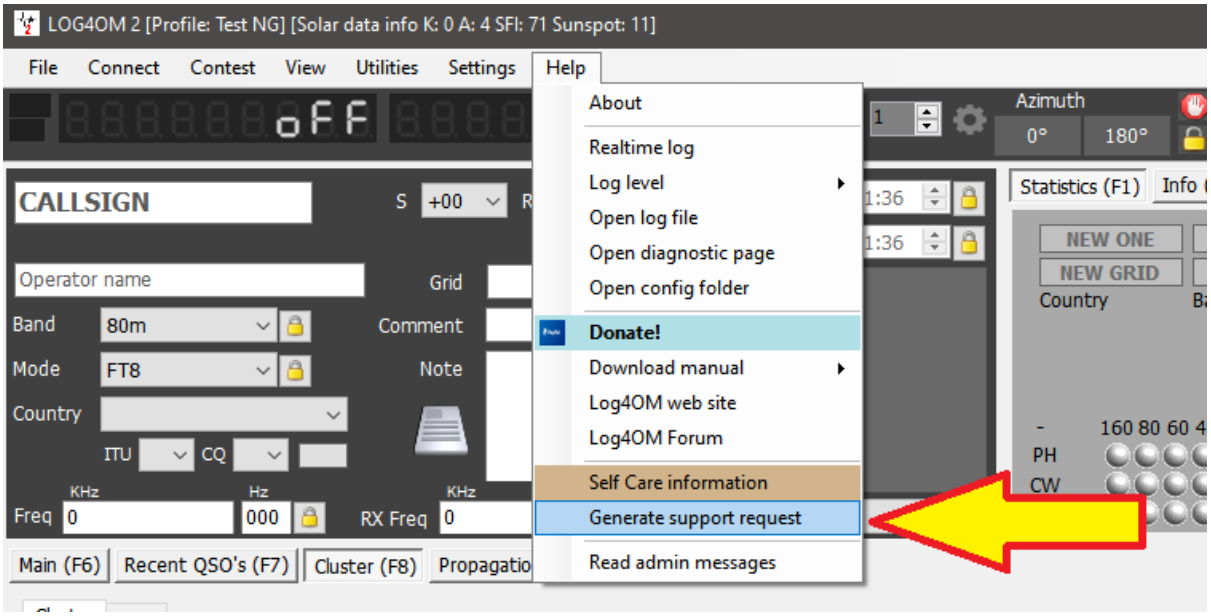
   b. Paste the files and folders above to C:\Users\YOUR USER NAME\AppData\Roaming\Log4OM2\user folder on the new install of Log4OM - Allow the existing files to be overwritten.

4. On the old PC copy the database file for the logbook and paste to the same location on the new PC HINT! the name file ends in .sqlite
5. Re-start the new install of Log4OM and it should be a replica of the original installation.
6.

How to generate a support request

How to prepare log file for support review. Please do this only when asked for the log file package:

- Enable a higher log level. Usually errors are found by setting “trace mode” information that is not usually saved in the program log file to avoid unnecessary size of the file itself. The support team will ask you for the log level require. Debug is usually enough, but sometimes a higher level is required.
  Debug and trace mode can be set from HELP MENU
- REPRODUCE THE ISSUE. - The log will save the events for the current day only, it is removed daily, so an issue that happened yesterday will not be available in the log today.
- Take note of the time of day (UTC) when the issue happens. The log will usually produce thousands of lines, and this could help us identify the issue.
- Open the help menu an select ‘Generate support request’, please check the box “include ADIF backup”, and answer all questions listed as fully as possible, then click on “prepare support request”.



- **Send the ZIP file** to the provided email address.

To debug remote calls and other things, the log will also store web URL and other information related to how the software works. Usually that information is safely stored on your PC, but you should be advised that we can see some information (password for online services like QRZ/HAMQTH or similar) from your log. That information, if needed, will be used to reproduce the issue and provide a better support, and will be deleted and never disclosed when we close the incident request.

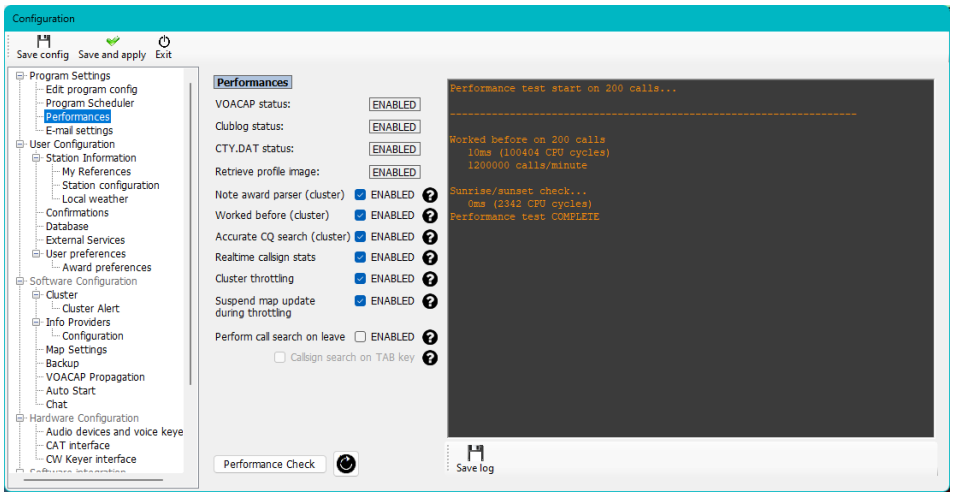
If you feel un-comfortable about the above, you can send a log extract purged of that non relevant information (it’s a text file) editing the log file(s) (log4om and communicator) contained in the support request.

Log files are stored in your pc roaming folder - Help/open configuration folder

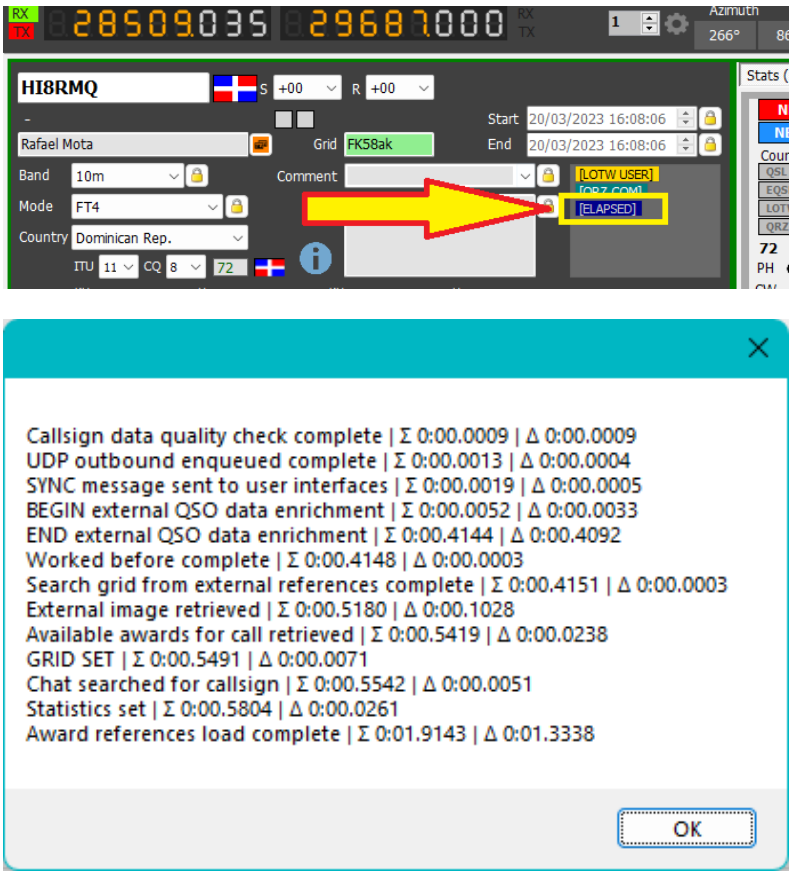
Performance – Self Care – Connection checks

Performance:

A performance check is available in the Program Config/Performance menu by clicking the ‘Performance check’ button. This tests the lookup of 200 call signs for worked before and provides a basic system check.



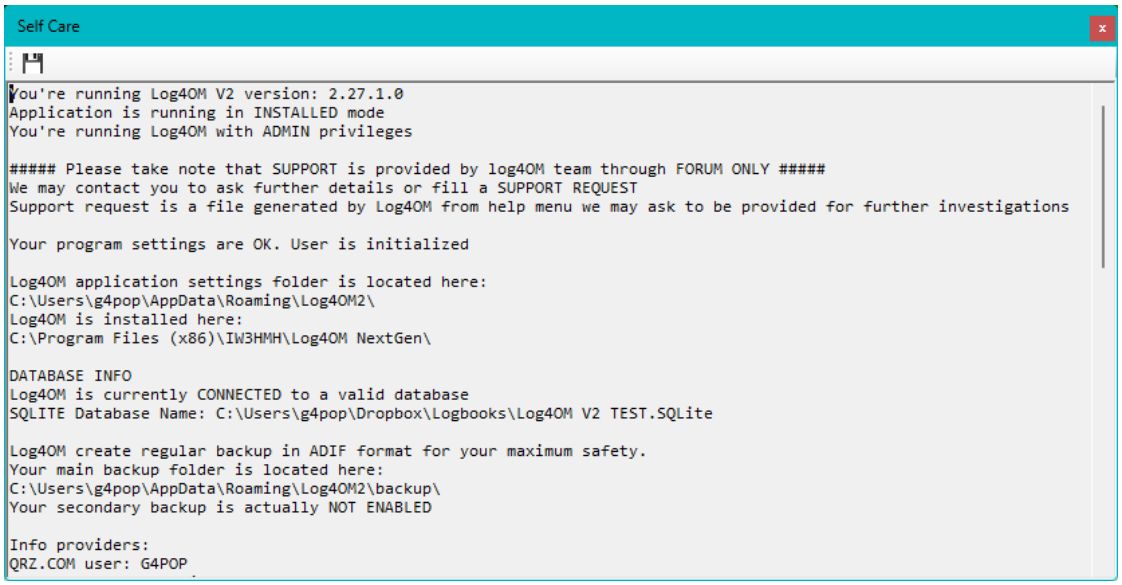
A more detailed report is available by setting the ‘Log Level’ in the help menu to Debug mode, this causes a message to be displayed in the message window of the main UI which when clicked on displays a report of the various aspects of the Log4OM functions.



This dialog displays the time for each function plus the cumulative time for the complete process and can be used to pin-point any delays in the processes.

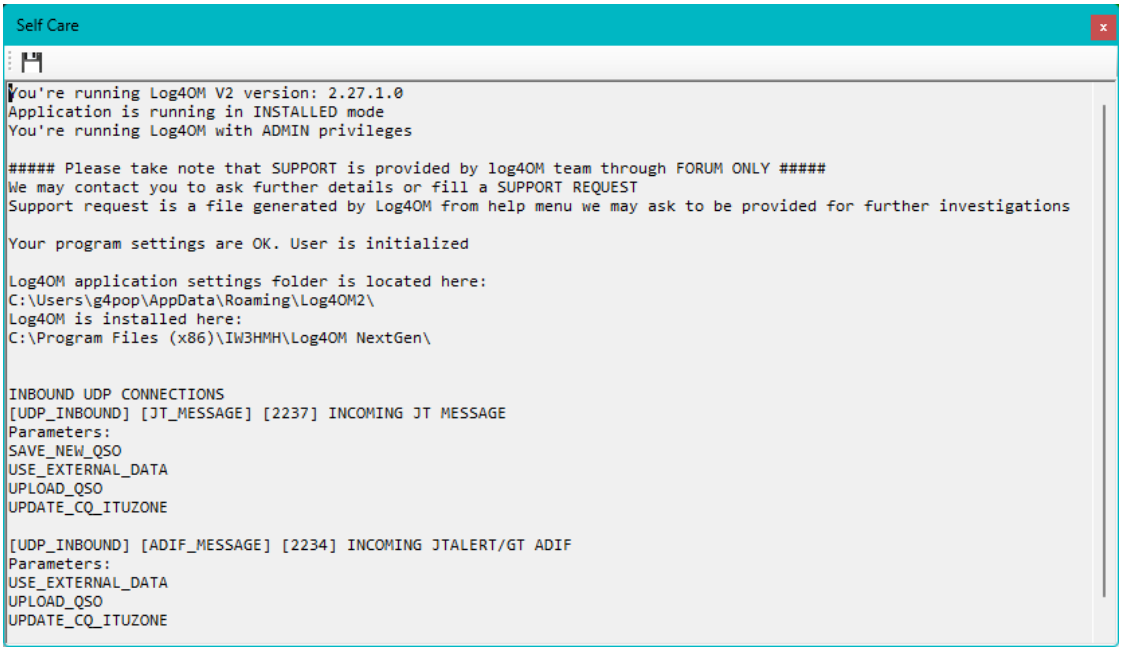
Self-Care Information

Selecting Self Care from the Help menu provides a display of the users settings, program locations, user names and passwords and should not be shared with other users indiscriminately.



Self-Care Connections

Self-care connections is available in the Help menu and displays all relevant details regarding connection that are enabled.



Appendix 1

UDP Log4OM Remote Control interface

Overview

Control interface is an **UDP** message interface that receive and returns information to the caller. There is also an "unsolicited interface" that is able to originate status messages from Log4OM user interface and broadcast them to the current network (broadcast message to 255.255.255.255) rather than sending them to a specific IP/port destination on user configuration.

Old "remote control messages" are still parsed for retro compatibilty if parsing of the remote control message fails due to an incorrect format received.

Inbound messages

Inbound message format is XML. Inquiry message is a standard message with some required XML fields that contains message payload if necessary.

All incoming messages should be marked with a message type identifier and an unique ID (if missing, a default GUID will be assigned). All answers will be marked with the same message ID and type identifier.

ALIVE

This message is used to test Log4OM service availability.

```
<RemoteControlRequest>
      <MessageId>C0FC027F-D09E-49F5-9CA6-33A11E05A053</MessageId>
      <RemoteControlMessage>Alive</RemoteControlMessage>
</RemoteControlRequest>
```

Answer:

```
<RemoteControlResponse>
      <MessageId>C0FC027F-D09E-49F5-9CA6-33A11E05A053</MessageId>
      <RemoteControlMessage>Alive</RemoteControlMessage>
      <Done>True</Done>
</RemoteControlResponse >
```

GetRadioStatus

This message is used to poll connected radio status from Log4OM. The same message is also sent (on a different port) autonomously by Log4OM as part of his unsolicited status message creation. Format of the message is different from standard as it's kept equal to the one defined in N1MM protocol.

```
<RemoteControlRequest>
      <MessageId>C0FC027F-D09E-49F5-9CA6-33A11E05A053</MessageId>
      <RemoteControlMessage>GetRadioStatus</RemoteControlMessage>
</RemoteControlRequest>
```

Anwer:

```
<RadioInfo>
      <app>LOG4OM</app>
      <StationName>MY_PC</StationName>
      <OpCall>IW3HMH</OpCall>
      <RadioNr>1</RadioNr>
      <Freq>1410000</Freq>
      <TxFreq>1410000</TxFreq>
      <Mode>USB</Mode>
      <ActiveRadioNr>2</ActiveRadioNr>
      <IsSplit>false</IsSplit>
      <IsTransmitting>2</IsTransmitting>
</RadioInfo>
```

Freq is represented as values to the tens digit with no delimiter

SetTxFrequency

```
<RemoteControlRequest>
      <MessageId>C0FC027F-D09E-49F5-9CA6-33A11E05A053</MessageId>
      <RemoteControlMessage>SetTxFrequency</RemoteControlMessage>
      <Frequency>14075000</Frequency >
</RemoteControlRequest>
```

Freq should be provided in Hz without signs

Answer:

```
<RemoteControlResponse>
      <MessageId>C0FC027F-D09E-49F5-9CA6-33A11E05A053</MessageId>
      <RemoteControlMessage>SetTxFrequency</RemoteControlMessage>
      <Done>True</Done>
</RemoteControlResponse>
```

SetRxFrequency

```
<RemoteControlRequest>
      <MessageId>C0FC027F-D09E-49F5-9CA6-33A11E05A053</MessageId>
      <RemoteControlMessage>SetRxFrequency</RemoteControlMessage>
      <Frequency>14075000</Frequency >
</RemoteControlRequest>
```

Freq should be provided in Hz without signs

Answer:

```
<RemoteControlResponse>
      <MessageId>C0FC027F-D09E-49F5-9CA6-33A11E05A053</MessageId>
      <RemoteControlMessage>SetRxFrequency</RemoteControlMessage>
      <Done>True</Done>
</RemoteControlResponse>
```

SetMode

```
<RemoteControlRequest>
      <MessageId>C0FC027F-D09E-49F5-9CA6-33A11E05A053</MessageId>
      <RemoteControlMessage>SetMode</RemoteControlMessage>
      <Mode>USB</Mode>
</RemoteControlRequest>
```

Answer:

```
<RemoteControlResponse>
      <MessageId>C0FC027F-D09E-49F5-9CA6-33A11E05A053</MessageId>
      <RemoteControlMessage>SetMode</RemoteControlMessage>
      <Done>True</Done>
</RemoteControlResponse>
```

SetCallsign

Set the Callsign provided on the user interface. Note: if a callsign is already visible on user interface and was manually set by the operator this message will be discarded.

```
<RemoteControlRequest>
	<MessageId>C0FC027F-D09E-49F5-9CA6-33A11E05A053</MessageId>
	<RemoteControlMessage>SetCallsign</RemoteControlMessage>
	<Callsign>G4POP</Callsign>
</RemoteControlRequest>
```

Answer:

```
<RemoteControlResponse>
	<MessageId>C0FC027F-D09E-49F5-9CA6-33A11E05A053</MessageId>
	<RemoteControlMessage>SetCallsign</RemoteControlMessage>
	<Done>True</Done>
</RemoteControlResponse>
```

ClearUI

Clears the user interface from previously set callsign. Note: If a callsign is already visible on user interface and was manually set by the operator this message will be discarded.

```
<RemoteControlRequest>
	<MessageId>C0FC027F-D09E-49F5-9CA6-33A11E05A053</MessageId>
	<RemoteControlMessage>ClearUI</RemoteControlMessage>
</RemoteControlRequest>
```

Answer:

```
<RemoteControlResponse>
	<MessageId>C0FC027F-D09E-49F5-9CA6-33A11E05A053</MessageId>
	<RemoteControlMessage>ClearUI</RemoteControlMessage>
	<Done>True</Done>
</RemoteControlResponse>
```

WorkedBefore

Returns info about previous contacts with the provided callsign.
Band and mode parameters are BOTH optional and may provide more details when provided

```
<RemoteControlRequest>
	<MessageId>C0FC027F-D09E-49F5-9CA6-33A11E05A053</MessageId>
	<RemoteControlMessage>WorkedBefore</RemoteControlMessage>
	<Callsign>G4POP</Callsign>
	<Band>20m</Band>
	<Mode>CW</Mode>
</RemoteControlRequest>
```

Answer:

```
<WorkedBefore>
	<MessageId>C0FC027F-D09E-49F5-9CA6-33A11E05A053</MessageId>
	<Valid>True</Valid>
	<Callsign>G4POP</Callsign>
	<Worked>{Application answer}</Worked>
</WorkedBefore>
```

Answer assume following values:

- NotWorked: Callsign has never been worked before
- Worked: Callsign has been worked (on another mode/band if no band mode have been provided)
- WorkedSameBand: Callsign has been worked on same band (but not mode)
- WorkedSameMode: Callsign has been worked on same mode (but not band)
- WorkedSameEmissionType: Callsign has been worked on same emission type but not on same mode (emission types are PHONE / CW / DIGITAL)
- WorkedSameBandMode: Callsign has been worked on same band and mode
- WorkedSameBandEmissionType: Callsign has been worked on same band and emission type but not the same exact mode

As example:

20m CW is worked same band of 20m USB

20m AM is worked same band / emission type of 20m USB

20m PSK31 is worked same emission type of 10m FT8

Unsolicited messages

Log4Om sends automatic messages, when enabled, reporting some information to listeners.

Messages can be broadcasted on a specific port or specifically directed towards a single IP / port on user needs. Messages are sent when something changes or, on user request, every 5 seconds and when something changes.

RADIO STATUS message

This message is transmitted everytime a change happens on the CAT layer. Prerequisites for the message are:

1) CAT engine is running and connected to a valid radio

2) Message output is enabled in program configuration

Message format:

See GetRadioStatus message