

Setting up N1MM+ Logger for the RSGB AFS Datamodes 2023 Contest

This guide is aimed at those who have had experience with operating PSK ('phase shift keying') and RTTY ('radioteletype'), but have not done so in a contest situation and/or using N1MM. It aims to complement the 'Contest Logger Setup' PowerPoint slides sent out from the SRS Contest Group regarding configuring N1MM for CW and SSB contests. For general information about N1MM, plus details regarding the entry and log windows, creation of a database, station setup, CAT control configuration, test logging, the bandmap, and dupe checking, I would suggest reading the PowerPoint relating to the setup for CW, first – as a primer.

The material below will only highlight what is specific regarding the datamodes part of the AFS contest series, and I have assumed that your database and CAT control config have already been set up, and that your station data has been entered. If not, please refer to the PP slides for CW contests, and undertake this setting up. (Digimodes work in much the same way as CW.)

Also, as the configuration in N1MM for each transceiver-and-interface combination is quite unique, I have not provided guidance regarding configuring the 'hardware' on N1MM (i.e. the window accessed by clicking 'Config' → selecting 'Configure Ports, Mode Control, Winkey, etc.' on the drop-down menu). Please check your rig's and interface's manuals for help with this. Also, check out YouTube for videos. Enter the rig model, 'N1MM' and interface name into the search field, and see what comes up.

For simplicity, the guidance below is for the use the MMVARI digmode software – which 'comes with' N1MM – and for RTTY to be in the form of 'AFSK', in which the RTTY signal is produced by an audio tone, and not by the keying of the carrier ('FSK'). Also, all operation is assumed to be on upper sideband. (You may have to use a special 'digimode' upper sideband setting on your rig. For example, the IC7300 has 'USB-D'.) All of this facilitates relatively easy operation, with little to change in settings required when switching between RTTY and PSK63.

Please read the rules of this contest (<https://www.rsgbcc.org/hf/rules/2023/rafs.shtml>), especially noting the respective frequency segments for PSK and RTTY operation. Also note that the same station can be worked on the same band twice – once using PSK63 and once with RTTY.

Links to some useful clips for a couple of popular rigs, the Yaesu FT-857/897 and Icom's IC7300, are below. The IC7300 videos are particularly comprehensive, as no allowance needs to be made for different types of interface; the 'interface' (i.e. the soundcard and virtual COM generator) is in the box. For those with any transceiver requiring an interface, the FT857 video may still give some pointers.

FT857/897

<https://www.youtube.com/watch?v=BLUPsxu8mj4>

For IC7300

<https://www.youtube.com/watch?v=ZCkiuzAMuZI&t=166s>

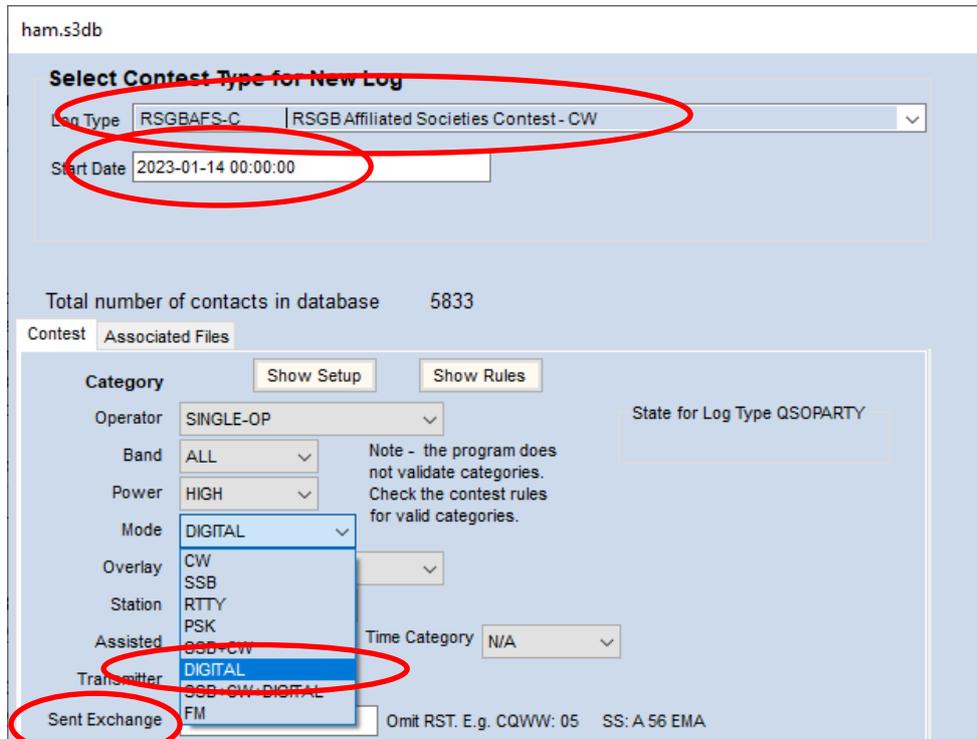
<https://www.youtube.com/watch?v=HbkEOsKwNAk>

To show what happens during a datamode contest QSO with N1MM, watch this video from 50 secs in; it does a better job than I could of explaining it:

<https://www.youtube.com/watch?v=UHjYqbTTCaM>

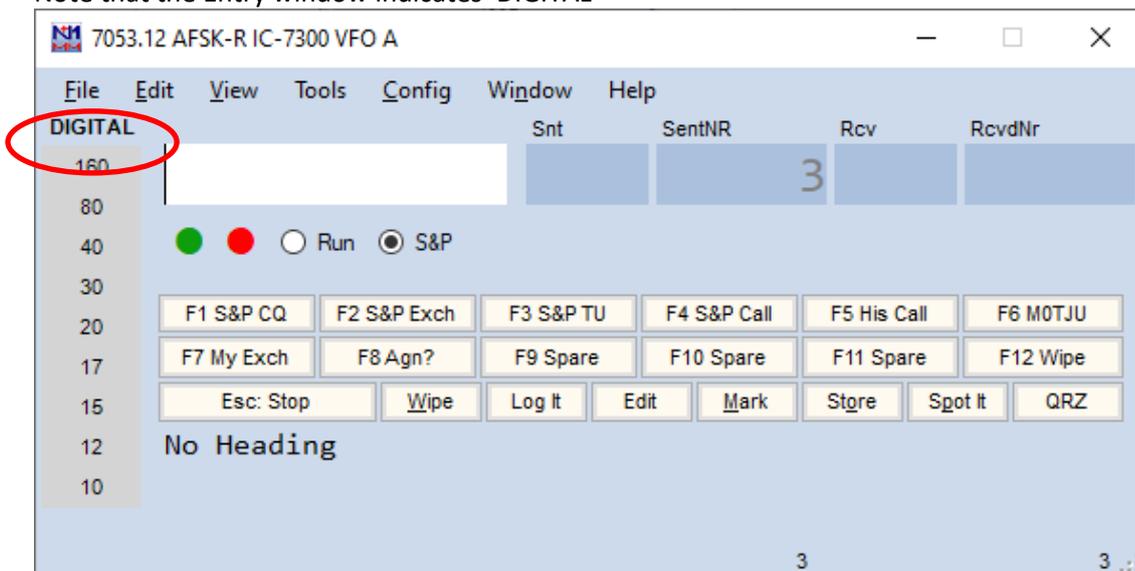
Once N1MM+ has been opened, click 'File' → select 'New Log in Database'...and

- Select 'RSGBAFC-C' as the Log Type. (There is no 'Datamode' option.)
- Make sure that details in 'Start Date' are correct for the Data contest
- Select 'DIGITAL' as the 'Mode'. This will facilitate the use of two datamodes, PSK and RTTY



...and don't forget to put '#' in the 'Sent Exchange' field, to generate serial numbers.

Note that the Entry window indicates 'DIGITAL'

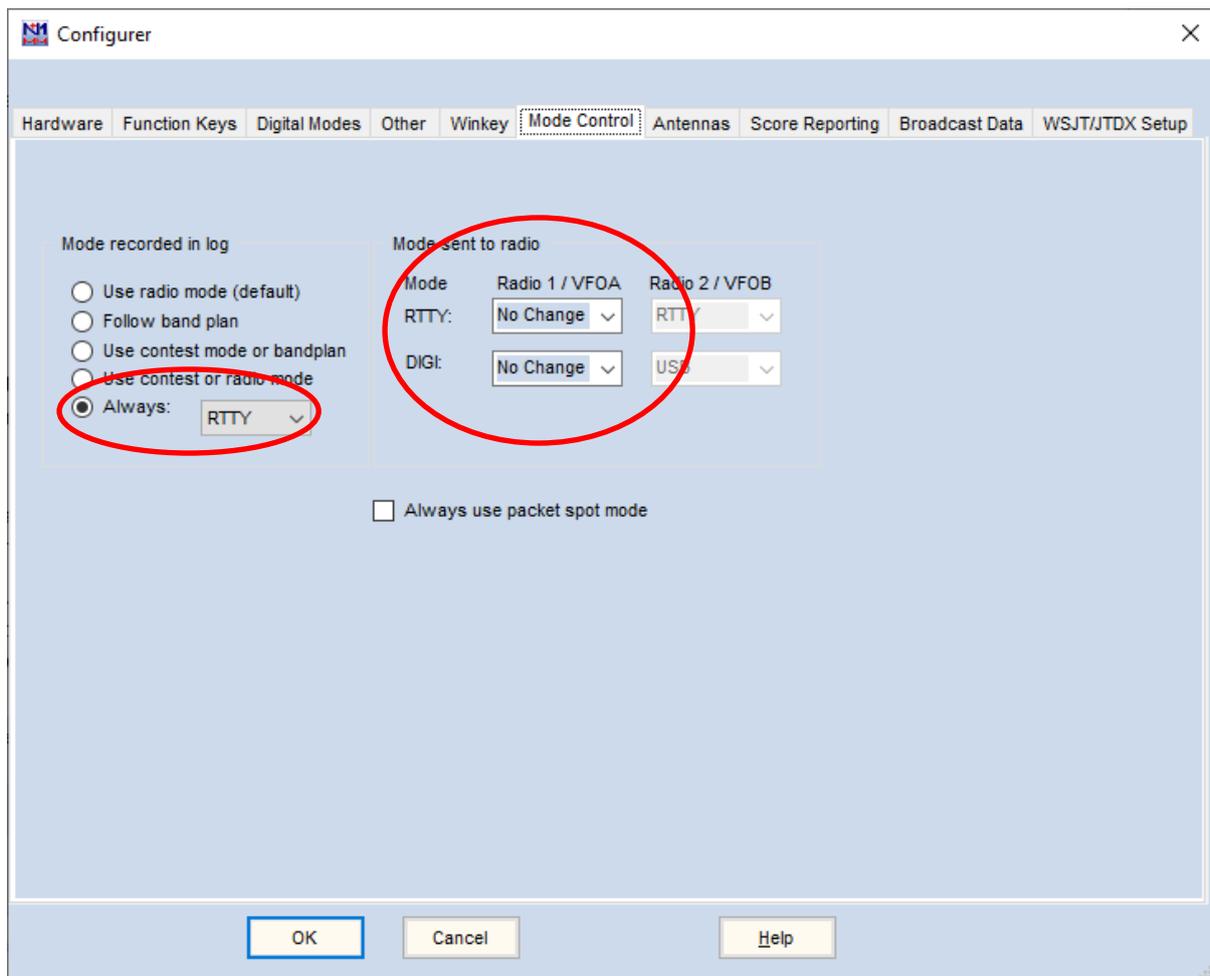


[Please do your necessary rig/CAT/interface configurations before going further.]

As there are two modes being used in this contest, RTTY and PSK63, logging is made a little more complicated than if there was a single 'DIGITAL' mode.

That's no problem; just remember that you will need to 'tell' N1MM what mode that you're using, in order for the log to show the correct mode.

You do this by going into 'Config' → 'Configure Control Ports, Winkey, etc.' → 'Mode Control', look at the check-box choices under 'Mode recorded in log', and select 'Always'. Then, in the adjacent drop-down box, choose either 'RTTY' or 'PSK63', depending on which mode you're using at the time.

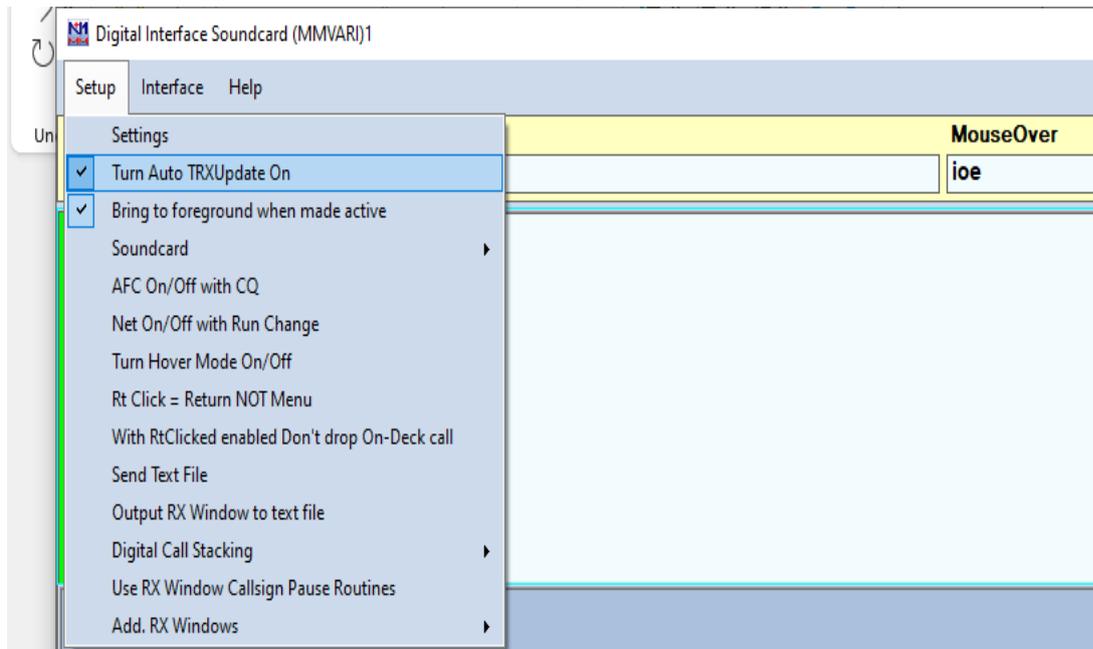


You will note the 'Mode sent to radio' heading in the centre of the window. Set these to 'No Change'.

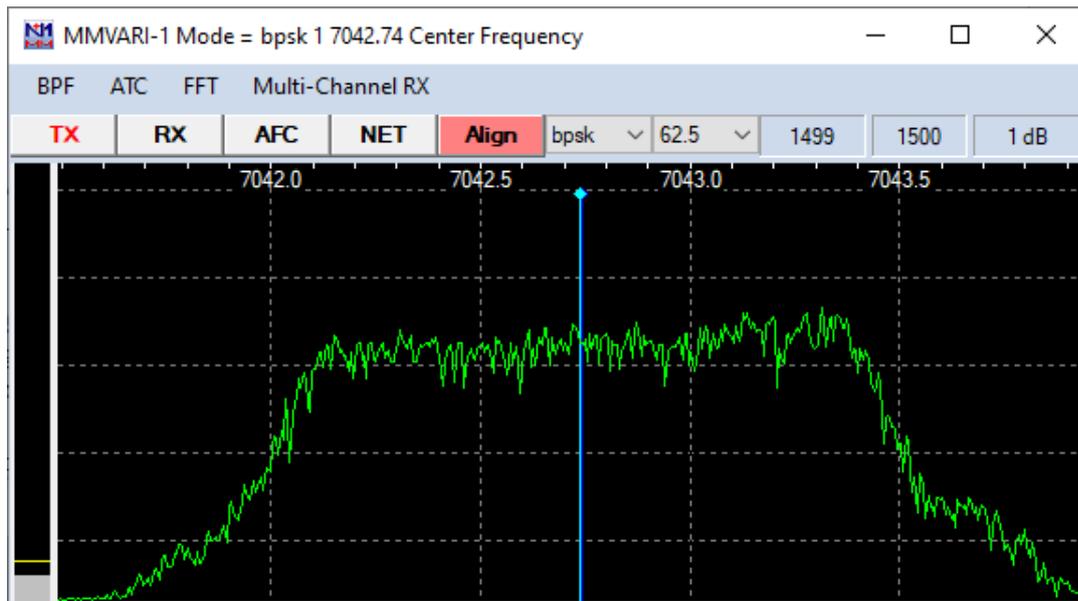
The digimode decryption program MMVARI should have opened. If not, select '**Window**' on the **Entry window** → '**Digital Interface**'. The data interface (the window showing the decrypted text), and a spectrum scope window, should both appear. If one of these windows is 'missing', chances are that it has been minimised. To check if that's the case, hover the mouse arrow over the N1MM icon

on the task bar – which should show small images of both windows – and click the one that hasn't opened.

To ensure that the frequency quoted in the log is accurate, go to the **menu on the Digital Interface** and click **'Setup' → select 'Turn Auto TRXUpdate On'**, as below. If this is not done, the log will quote the dial frequency of the rig, which will NOT be the frequency that you're transmitting on. As you will be using upper sideband, the frequency that you'll be producing RF on – that is, what should be recorded in the log – is dial frequency (MHz) + the (audio) frequency of the PSK or RTTY tone.

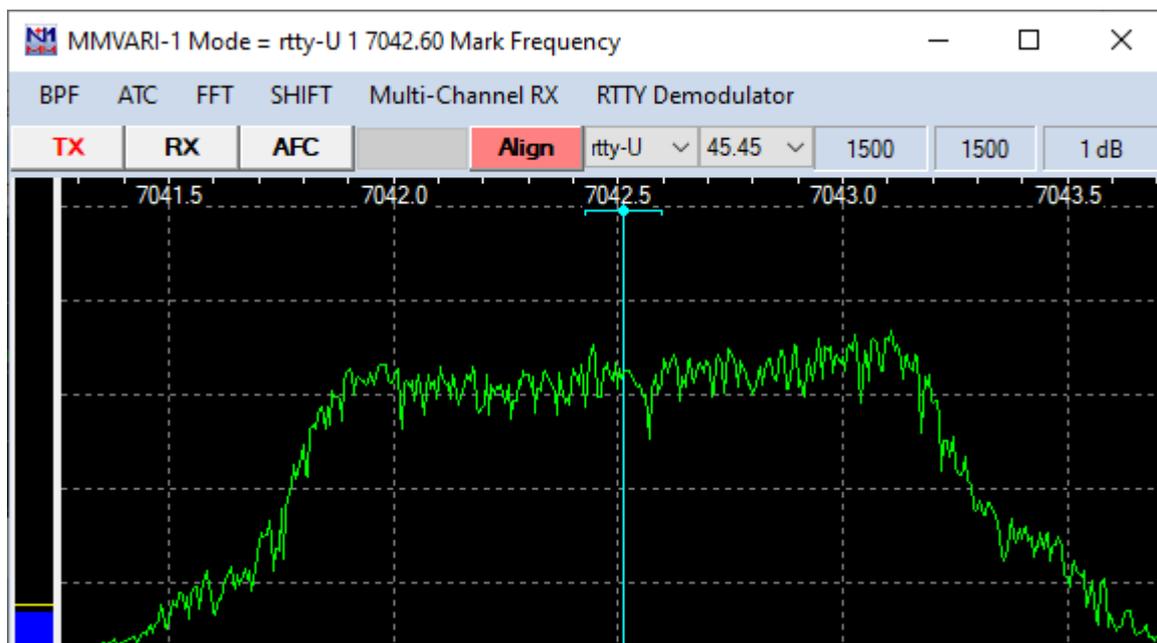


Looking at PSK63, first, if you wish to work this mode, go to the MMVARI spectrum scope/waterfall window, and select 'BPSK' in the centre drop-down box, and select '62.5' in the drop-down box directly to the right. Ensure that the 'AFC' button is off. Click the 'Align' button, in order to align the frequency that you are receiving at with that you'll be transmitting on; there is one marker for each, one aqua and one dark blue. (Only if you are operating 'split frequency' – say, when chasing a DX station – will you work 'split'.) Put the aligned audio tone markers in the middle of your passband, and leave it there; tune in a station that you want to work by turning the VFO, not by moving the markers.



RTTY is a bit trickier: if you wish to work this mode, go to the MMVARI spectrum scope/waterfall window, and select 'RTTY-U' ('U' for upper sideband) in the centre drop-down box, and select '45.45' in the drop-down box directly to the right, as shown below.

Click the 'Align' button, in order to align the transmit and receive markers, thereby ensuring that you'll be receiving on the frequency that you'll be transmitting on. Ensure that 'AFC' button is off. Drag the (aligned) audio tone markers to the middle of your passband, and leave them there; tune in a station that you want to work by turning the VFO. You will note that the audio tone marker for RTTY is a 'T-bar' shape, indicating the 170Hz difference in frequency (the 'shift') in the two alternating tones that indicate the '0's and '1's of the Baudot teletype code.



The frequency to be logged for a RTTY signal is that of the tone that has the highest RF frequency (the 'Mark').

Remember: when changing modes between RTTY and PSK, don't forget to change the mode recorded in the log ('Config' → 'Configure Control Ports, Winkey, etc.')

At the end of the contest, when a Cabrillo file of the log needs to be produced, make sure that references are made to 'datamodes', and not to 'CW'.

Also, change the 'PK' designation for PSK63 contacts to 'PS'.

Good luck!

73's

Evan MOTJU

12th January 2023