# MSHV: An Alternative to wsjt-x for Managing Pileups

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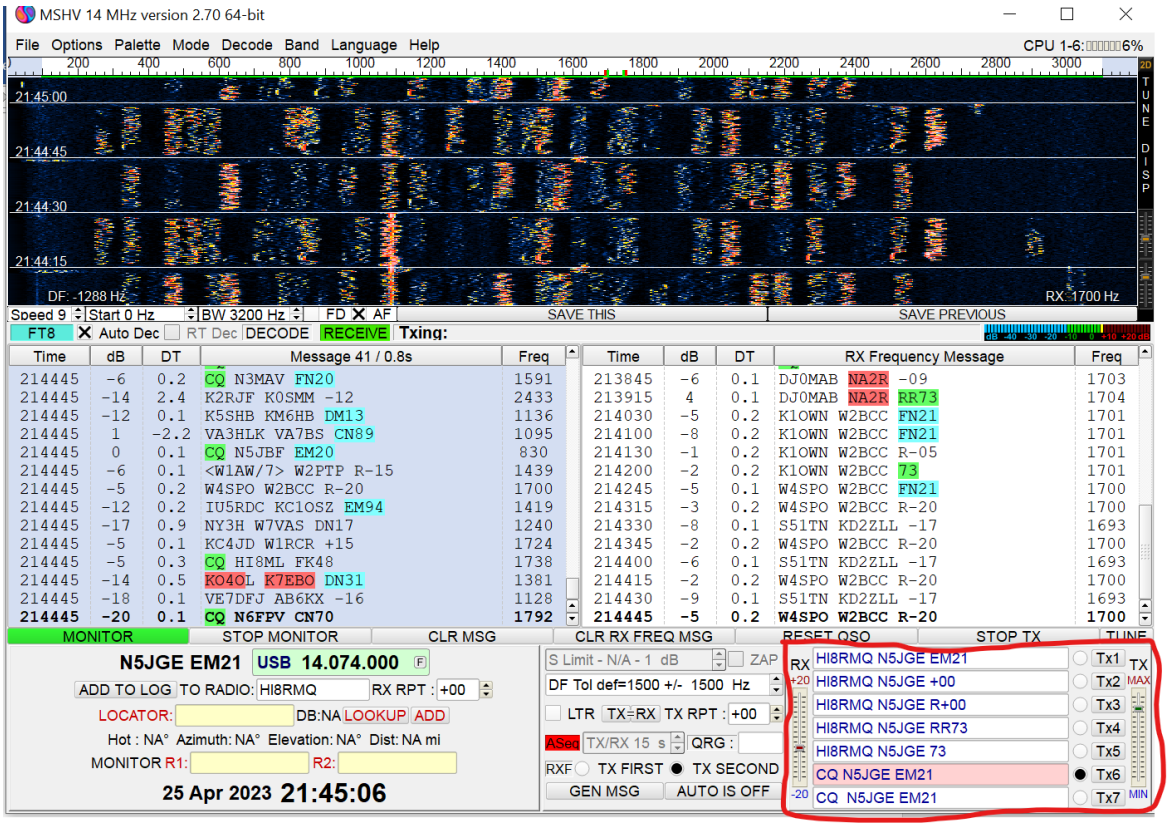
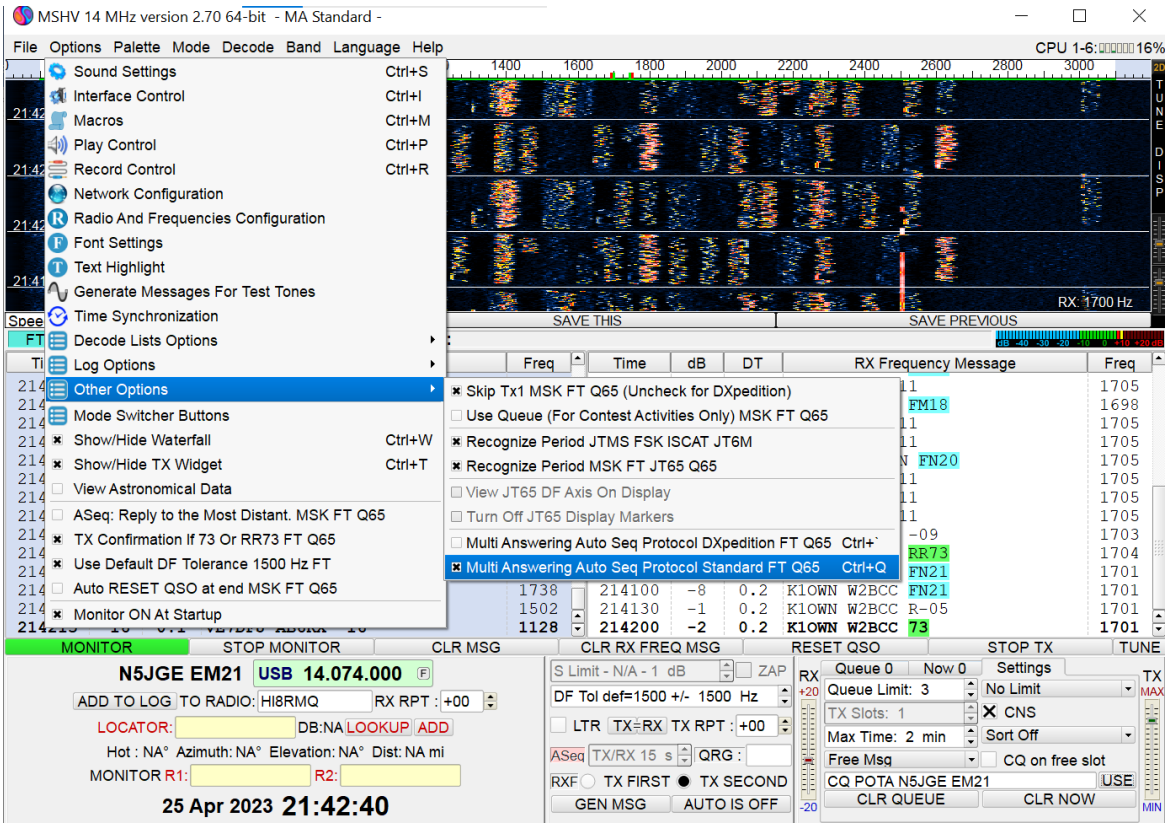
For most of my FT8 / FT4 operations, I use wsjt-x. One of the main reasons for that is its use of configuration files to manage multiple radios. At the home station, I mainly use an IC-7300, but can also use a couple of different QRP radios. When portable, I use an IC-7100 or one of the QRP rigs. Being able to switch radios by choosing the configuration file name in a menu makes this very easy. Many details are remembered for each rig including radio connection details, audio devices, transmit and tune gain values by band, power level for logging, etc.

In my opinion, a major shortcoming of wsjt-x is managing a pileup. The only option is to select from the first group of callers to reply to. This can be done by time sequence or maximum distance. Once that QSO is completed, you have find one of the other callers in the decoded receive list or call CQ again. Trying to remember the sequence of the second, third, etc. callers or selecting specific callers is not easy. This mainly happens to me when calling CQ POTA, CQ QRP, or when operating a special event callsign. For those operations, I much prefer MSHV, developed by LZ2HV. However, MSHV does not have radio configurations, so whenever you change radios, you have to reset radio interface, audio devices, etc. from scratch. Each has their good and bad points.

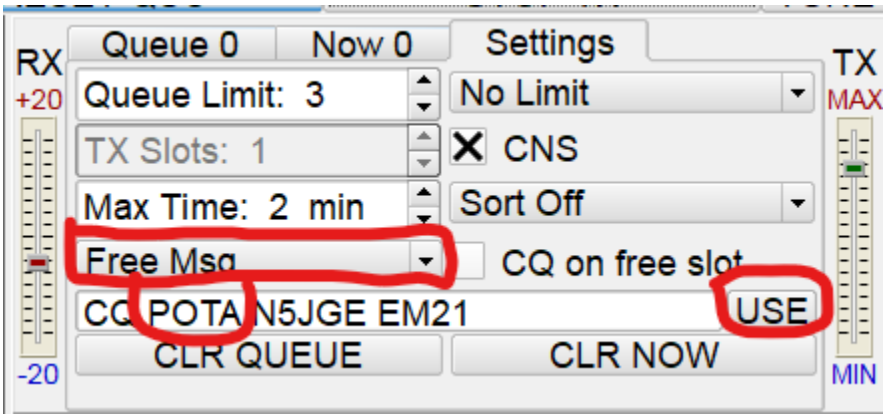
This is not a full tutorial on operating MSHV, there is an on-line manual to help you get started or help with specific questions (MSHV User Guide). Rather, I will highlight how to use "Multi Answering Auto Seq Protocol Standard". That is a quite mouthful, but basically, it allows MSHV to establish and maintain a queue of callers that have responded to your CQ. This discussion is based on MSHV version 2.70 for 64-bit Windows. Version 2.71 was released on April 25, 2023 and I have not reviewed its operation in detail yet. Of particular relevance to this article, Version 2.71 lists POTA and other "OTAs" in the "CQ" dropdown list described below. Other changes were bug fixes or were made to improve compatibility with wsjt-x Fox and Hound mode for DXpedition use.

The first screenshot below shows the MSHV user interface. The area of interest to us in the lower right corner outlined in red. In that screenshot, the single QSO message box is shown and is similar to wsjt-x with auto-generated messages for the current QSO partner. To change to Multi Answering mode, you select "Options-Other Options-Multi Answering Auto Seq Standard …" as shown in the second screenshot. That changes the message box to that shown in the third image. There are now three tabs in the message box area: "Queue", "Now" and "Settings". These are used to select how you CQ and how replies are processed.


MSHV 14 MHz version 2.70 64-bit
File Options Palette Mode Decode Band Language Help
CPU 1-6: 6%
DF: -1288 Hz
RX: 1700 Hz
Speed 9 Start 0 Hz BW 3200 Hz FD AF
SAVE THIS
SAVE PREVIOUS
FT8 Auto Dec RT Dec DECODE RECEIVE Txing:
Time dB DT Message 41 / 0.8s Freq
214445 -6 0.2 CQ N3MAV FN20 1591
214445 -14 2.4 K2RJF K0SMM -12 2433
214445 -12 0.1 K5SHB KM6HB DM13 1136
214445 1 -2.2 VA3HLK VA7BS CN89 1095
214445 0 0.1 CQ N5JBF EM20 830
214445 -6 0.1 <W1AW/7> W2PTP R-15 1439
214445 -5 0.2 W4SPO W2BCC R-20 1700
214445 -12 0.2 IU5RDC KC1OSZ EM94 1419
214445 -17 0.9 NY3H W7VAS DN17 1240
214445 -5 0.1 KC4JD W1RCR +15 1724
214445 -5 0.3 CQ HI8ML FK48 1738
214445 -14 0.5 KO4OL K7EBO DN31 1381
214445 -18 0.1 VE7DFJ AB6KX -16 1128
214445 -20 0.1 CQ N6FPV CN70 1792
Time dB DT RX Frequency Message Freq
213845 -6 0.1 DJ0MAB NA2R -09 1703
213915 4 0.1 DJ0MAB NA2R RR73 1704
214030 -5 0.2 K1OWN W2BCC FN21 1701
214100 -8 0.2 K1OWN W2BCC FN21 1701
214130 -1 0.2 K1OWN W2BCC R-05 1701
214200 -2 0.2 K1OWN W2BCC 73 1701
214245 -5 0.1 W4SPO W2BCC FN21 1700
214315 -3 0.2 W4SPO W2BCC R-20 1700
214330 -8 0.1 S51TN KD2ZLL -17 1693
214345 -2 0.2 W4SPO W2BCC R-20 1700
214400 -6 0.1 S51TN KD2ZLL -17 1693
214415 -2 0.2 W4SPO W2BCC R-20 1700
214430 -9 0.1 S51TN KD2ZLL -17 1693
214445 -5 0.2 W4SPO W2BCC R-20 1700
MONITOR STOP MONITOR CLR MSG CLR RX FREQ MSG RESET QSO STOP TX TUNE
N5JGE EM21 USB 14.074.000
ADD TO LOG TO RADIO: HI8RMQ RX RPT : +00
LOCATOR: DB:NA LOOKUP ADD
Hot : NA° Azimuth: NA° Elevation: NA° Dist: NA mi
MONITOR R1: R2:
25 Apr 2023 21:45:06
S Limit - N/A - 1 dB ZAP
DF Tol def=1500 +/- 1500 Hz
LTR TX=RX TX RPT : +00
ASeq TX/RX 15 s QRG :
RXF TX FIRST TX SECOND
GEN MSG AUTO IS OFF
HI8RMQ N5JGE EM21 Tx1
HI8RMQ N5JGE +00 Tx2
HI8RMQ N5JGE R+00 Tx3
HI8RMQ N5JGE RR73 Tx4
HI8RMQ N5JGE 73 Tx5
CQ N5JGE EM21 Tx6
CQ N5JGE EM21 Tx7


MSHV 14 MHz version 2.70 64-bit - MA Standard -
File Options Palette Mode Decode Band Language Help
CPU 1-6: 16%
Sound Settings Ctrl+S
Interface Control Ctrl+I
Macros Ctrl+M
Play Control Ctrl+P
Record Control Ctrl+R
Network Configuration
Radio And Frequencies Configuration
Font Settings
Text Highlight
Generate Messages For Test Tones
Time Synchronization
Decode Lists Options
Log Options
Other Options
Mode Switcher Buttons
Show/Hide Waterfall Ctrl+W
Show/Hide TX Widget Ctrl+T
View Astronomical Data
ASeq: Reply to the Most Distant. MSK FT Q65
TX Confirmation If 73 Or RR73 FT Q65
Use Default DF Tolerance 1500 Hz FT
Auto RESET QSO at end MSK FT Q65
Monitor ON At Startup
Skip Tx1 MSK FT Q65 (Uncheck for DXpedition)
Use Queue (For Contest Activities Only) MSK FT Q65
Recognize Period JTMS FSK ISCAT JT6M
Recognize Period MSK FT JT65 Q65
View JT65 DF Axis On Display
Turn Off JT65 Display Markers
Multi Answering Auto Seq Protocol DXpedition FT Q65 Ctrl+`
Multi Answering Auto Seq Protocol Standard FT Q65 Ctrl+Q
RX: 1700 Hz
SAVE THIS
SAVE PREVIOUS
Time dB DT RX Frequency Message Freq
214100 -8 0.2 K1OWN W2BCC FN21 1701
214130 -1 0.2 K1OWN W2BCC R-05 1701
214200 -2 0.2 K1OWN W2BCC 73 1701
MONITOR STOP MONITOR CLR MSG CLR RX FREQ MSG RESET QSO STOP TX TUNE
N5JGE EM21 USB 14.074.000
ADD TO LOG TO RADIO: HI8RMQ RX RPT : +00
LOCATOR: DB:NA LOOKUP ADD
Hot : NA° Azimuth: NA° Elevation: NA° Dist: NA mi
MONITOR R1: R2:
25 Apr 2023 21:42:40
S Limit - N/A - 1 dB ZAP
DF Tol def=1500 +/- 1500 Hz
LTR TX=RX TX RPT : +00
ASeq TX/RX 15 s QRG :
RXF TX FIRST TX SECOND
GEN MSG AUTO IS OFF
Queue 0 Now 0 Settings
Queue Limit: 3 No Limit
TX Slots: 1 CNS
Max Time: 2 min Sort Off
Free Msg CQ on free slot
CQ POTA N5JGE EM21 USE
CLR QUEUE CLR NOW

In the figure below, you can see that I have chosen the “Free Message” in the bottom-most dropdown list. I then typed “POTA” after “CQ” and clicked the “Use” button. The Free Message option allows you to add “POTA” as I did or other qualifiers such as “QRP” to your CQ message. The list also has built in CQ messages for “DX”, continents and other common modifiers.

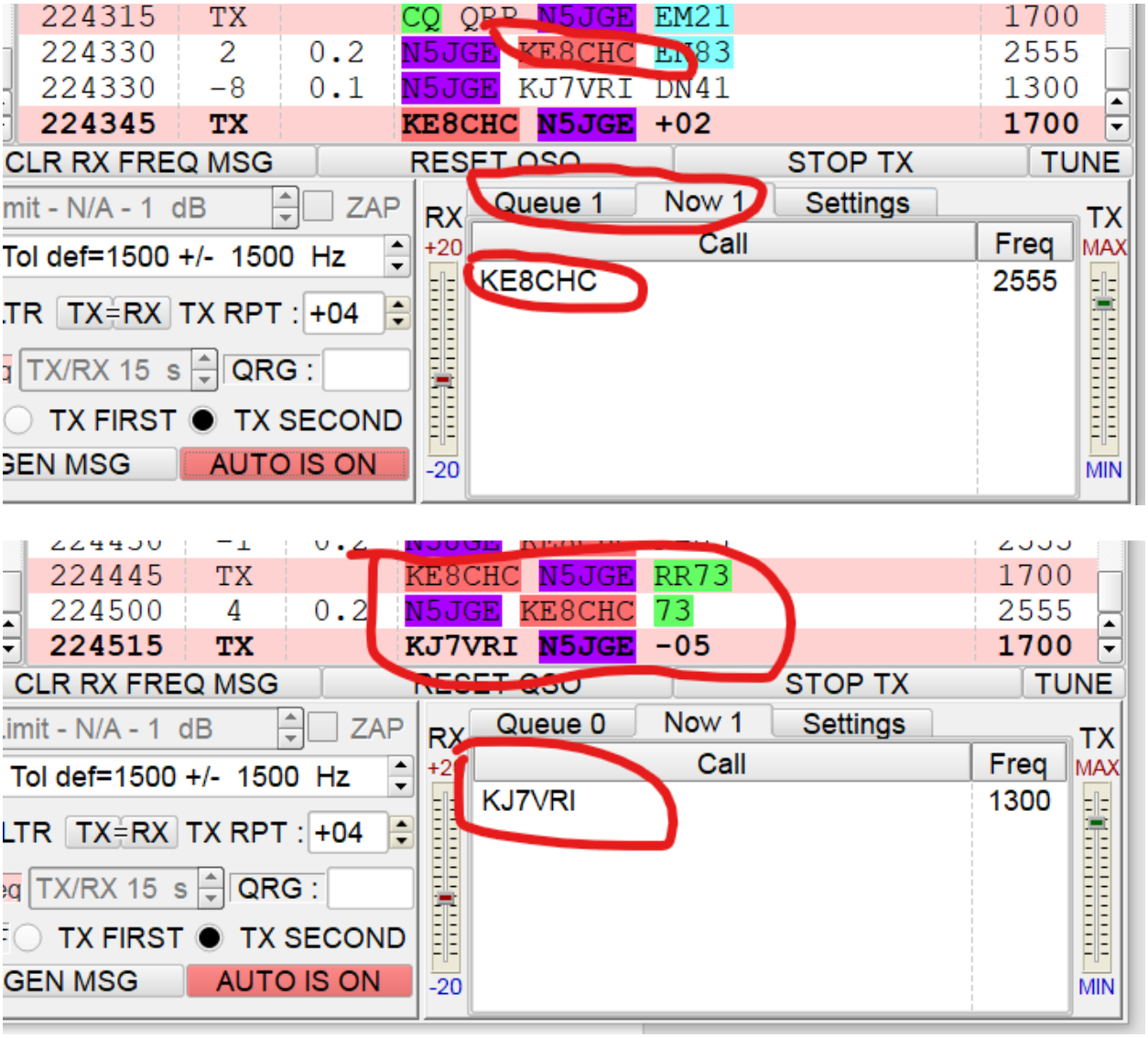



Now that we have our CQ message set, we can decide how to process replies. The first decision is how many callers to place in queue. I typically choose a “Queue Limit” of 2 or 3. If you work 2 or 3 callers as quickly as possible, it will take at least 60 to 75 seconds per QSO and those still in the queue may lose interest and move on to other contacts. Although I find that with POTA in particular, the callers are very persistent and will try again later if they don’t make the contact initially.

Another decision is what order to use to reply to callers. This is chosen in the dropdown list labelled “Sort Off” in thew above screenshot. With “Sort Off” selected, the callers are answered in the order that they are received for the first time. If they keep or stop calling, their place in the queue does not change. Other sort options are distance (farthest first) and S/N (strongest first). (You can also sort by distance in the lists of callers within the “Queue” and “Now” tabs.)

The “max Time” setting controls how long MSHV will reply to a non-responsive caller before moving to the next caller in queue. Lastly, the checkbox labelled “CNS” means “Call Non-Stop”. This causes MSHV to reply to each caller in the order selected without having to re-enable transmit. It is important to remember that as the control operator, you must be vigilant and step-in if things go awry. If this box is unchecked, then you can simply re-enable transmit after each completed QSO like wsjt-x requires.

So, what happens when we call CQ? As you see below, 2 callers replied to my CQ in the same cycle. The first caller (KE8CHC) went to the “Now” tab and I replied with his signal report. The second caller (KJ7VRI) went into the “Queue” tab. The tab titles now show the number of callers in that tab. In the second screenshot below, when the QSO with KE8CHC is completed, KJ7VRI moves into the “Now” tab and I reply to him with his signal report. If more replies were received, they would have followed the same progression. If 3 callers were in the queue, the fourth and subsequent others would be ignored until the queue decreased to 2 or less. QSOs are logged at the end of the cycle where the first RR73 is received or transmitted. You can select to always send a final RR73, but it is only sent one time before moving to the next caller or sending CQ again. If the previous caller re-sends “R+S/N” or “RR73”, they will go to the back of the queue.




If you get stuck in an exchange where the other operator keeps sending the same message over and over again, you can use the “Clear Now” button to remove them from the “Now” tab and move to the next caller in the “Queue” tab. If the first caller continues to call, they will be added to the end of the queue. I do not know of any way to ignore repetitive callers other than clearing them. You can also right click on a callsign in either the “Queue” or “Now” tabs to delete just that call sign.

Those are the basics of using Multi Answering mode in MSHV. I find that it makes handling even small pileups much easier and less stressful – check it out at [MSHV Home Page].