# Quick-Start Guide to WSJT-X Version 1.1

WSJT-X Version 1.1 includes mode JT65A as well as JT9 and increases the maximum displayed bandwidth from 1000 to 5000 Hz. On most bands, set your dial frequency to the standard JT65 frequency (e.g., 14.076 on 20m). The full range of JT65 and JT9 signals is then displayed on the waterfall, and you can start a QSO on either mode by the usual double mouse-click procedure.

If you are an experienced user of WSJT-X, this brief guide should help you get started with version 1.1.

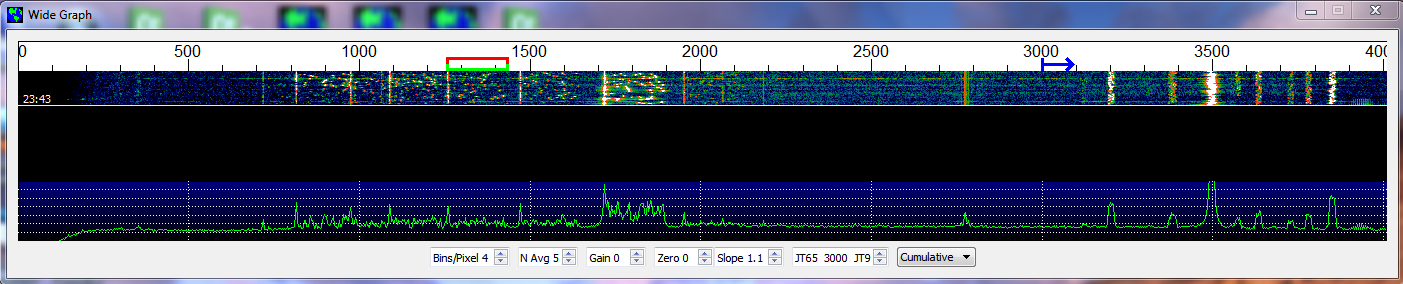
1. Install the Windows package in the usual way. The default installation directory is C:\WSJTX2, so you can keep your v1.0 installation intact in directory C:\WSJTX.
2. Start WSJT-X and enter your station configuration parameters.
3. Use the mouse to extend the width of the Wide Graph to nearly the full screen width. Increase **Bins/Pixel** until the waterfall scale extends to at least 4000 Hz. Then use the mouse to decrease the Wide Graph width until the 4000 Hz tick mark is just visible at the right edge. Set the **Slope** control to 1.1 (more on this parameter below). Note that instead of the parameters **f Min** and **f Max** used in WSJT-X v1.0, v1.1 has a single parameter **JT65 3000 JT9**. The number in the middle is an audio frequency in Hz, and can be changed. It sets the expected dividing line between JT65 signals and JT9 signals.
4. Select “JT9+JT65” on the **Mode** menu. So your results will be identical to those on the next page, toggle the button **Tx JT9** so that it reads **Tx JT65**. Set the Tx and Rx frequencies to 1714 Hz.
5. Click on **File | Open**, navigate to the …\save\Samples directory under your installation directory, and open the sample file 130610\_2343.wav. The waterfall and main window should look like the screen shots on the next page. The sample file contains 17 decodable signals — nine in JT65 mode (flagged with the character #), and eight in JT9 mode (flagged with @). Since the Tx mode was set to **Tx JT65**, signals in that mode are decoded first. If you had selected **Tx JT9**, JT9 signals would be decoded first.
6. You should confirm that mouse-click behavior is similar to that described in the Basic Operating Tutorial of the v1.0 [WSJT-X User’s Guide](http://www.physics.princeton.edu/pulsar/K1JT/WSJT-X_Users_Guide.pdf). Most commands behave nearly identically in v1.1, with the program determining the appropriate mode (JT9 or JT65) of each signal. For example, double-click on the waterfall near 813 Hz: the signal from W7VP will be decoded, and the line

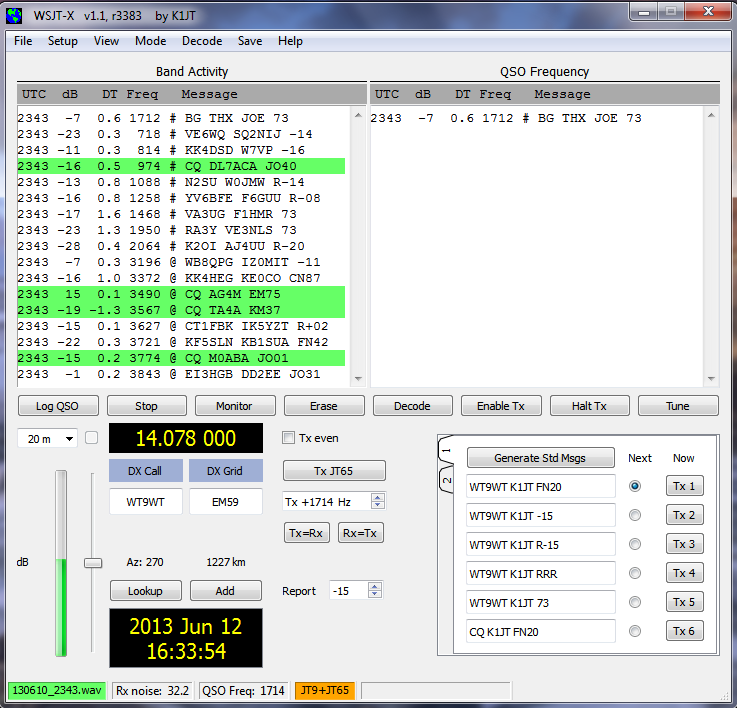
2343 -11 0.3 813 # KK4DSD W7VP -16

should appear in the QSO frequency text box. Double-click on the waterfall at 3196 Hz and the program will decode a JT9 message from IZ0MIT:

2343 -7 0.3 3196 @ WB8QPG IZ0MIT -11

Notice that when a signal is decoded in this way the Tx mode automatically switches to that of the decoded signal, and Rx and Tx frequency markers on the waterfall scale resize themselves accordingly.





1. Scroll back, if necessary, and double-click on the decoded JT65 message CQ DL7ACA JO40. The program will set Tx mode to JT65 and the Tx and Rx frequencies to his (audio) frequency, 974 Hz. If you had checked “Double-click on call sets Tx Enable”, the program would be armed to start a QSO with DL7ACA.
2. Double-click on the decoded JT65 message CQ TA4A KM37. The program will set Tx mode to JT9 and both frequencies to 3567 Hz. You’re now ready for a JT9 QSO with TA4A.
3. To take advantage of the dual-mode capability of WSJT-X v1.1, set your Rx bandwidth to at least 4 kHz (upper sideband mode, of course). As an example, I set “Low cut” on my TS-2000 to 200 Hz and “High Cut” to 5000 Hz. The Tx filters in most SSB transceivers will not pass audio frequencies higher than about 2700 Hz; WSJT-X v1.1 takes care of this by using split Rx/Tx frequencies. The Tx dial frequency is offset in 1000 Hz steps, and the generated audio frequency automatically adjusted to fall in the range 1000 – 2000 Hz. With CAT enabled and your transceiver set to Split mode, frequency control is handled fully automatically.
4. **This is important:** JT-Alert version 2.2.4, by VK3AMA, does not yet know about the dual-mode capability of WSJT-X. Do not use JT-Alert with WSJT-X v1.1 until Laurie has a chance to update his program!

**Summary:** JT65 has been widely used for EME on the VHF/UHF bands since 2003. More recently has also become very popular on the HF bands. It’s a reasonably mature mode with a well-optimized decoder. JT9 has 2 dB better sensitivity and uses less than 1/10 the bandwidth. The two modes use essentially the same message structure and QSO procedures but have widely different coding, synchronization, and modulation schemes.

WSJT-X v1.1 is an excellent tool for making detailed comparisons of the JT65 and JT9 protocols. Performance is comparable, with perhaps a slight edge to JT9 at the lowest decodable signal levels. The waterfall screen shot above (a full-size version is available [here](http://physics.princeton.edu/pulsar/K1JT/wsjtx_1.1c.png)) shows that nine JT65 signals (some of them overlapping) fill most of the mode’s conventional 2 kHz sub-band. In comparison, the eight JT9 signals have no overlap — and they leave plenty of room for more, even in a 1 kHz sub-band. Arguably JT9 makes much better use of available spectrum. I invite you to make your own side-by-side comparisons of JT65 and JT9.

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