

WSJT-X SuperCW Mode

WSJT-X release candidate 4.1 adds 150 WPM CW functionality.

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The developers of *WSJT-X* have announced release candidate *WSJT-X* 4.1.0-rc1. The candidate release for *WSJT-X* 4.1 is a major revision offering many new features and capabilities, the most important being the addition of an entirely new mode: “SuperCW.”

Introducing SuperCW

The addition of SuperCW to *WSJT-X* exemplifies technical innovation at its finest. Years of development and testing have resulted in a CW mode that is virtually indistinguishable from CW sent manually.

Taking advantage of the framework already in place for FT8 and FT4 exchanges, SuperCW follows the same exchange protocol, with station 1 calling CQ with their call sign and grid square, a responding station 2 answering with a call sign and grid square, then the

exchange of signal reports, and finally the traditional “73” and a “dit dit” to complete the contact. The true advantage of SuperCW over other modes is the speed at which this exchange can occur — because CW can be sent much faster than FT8, contacts happen in a fraction of the time.

Also, unlike other digital modes, SuperCW mode is not required on both sides of the exchange; someone using the client application can contact any station using CW. However, when the application is used on both sides of the exchange, speeds that were never before thought possible are achievable in even the worst of propagation conditions.

Features

Here is an overview of the many advanced features of the new SuperCW mode (see Figure 1).

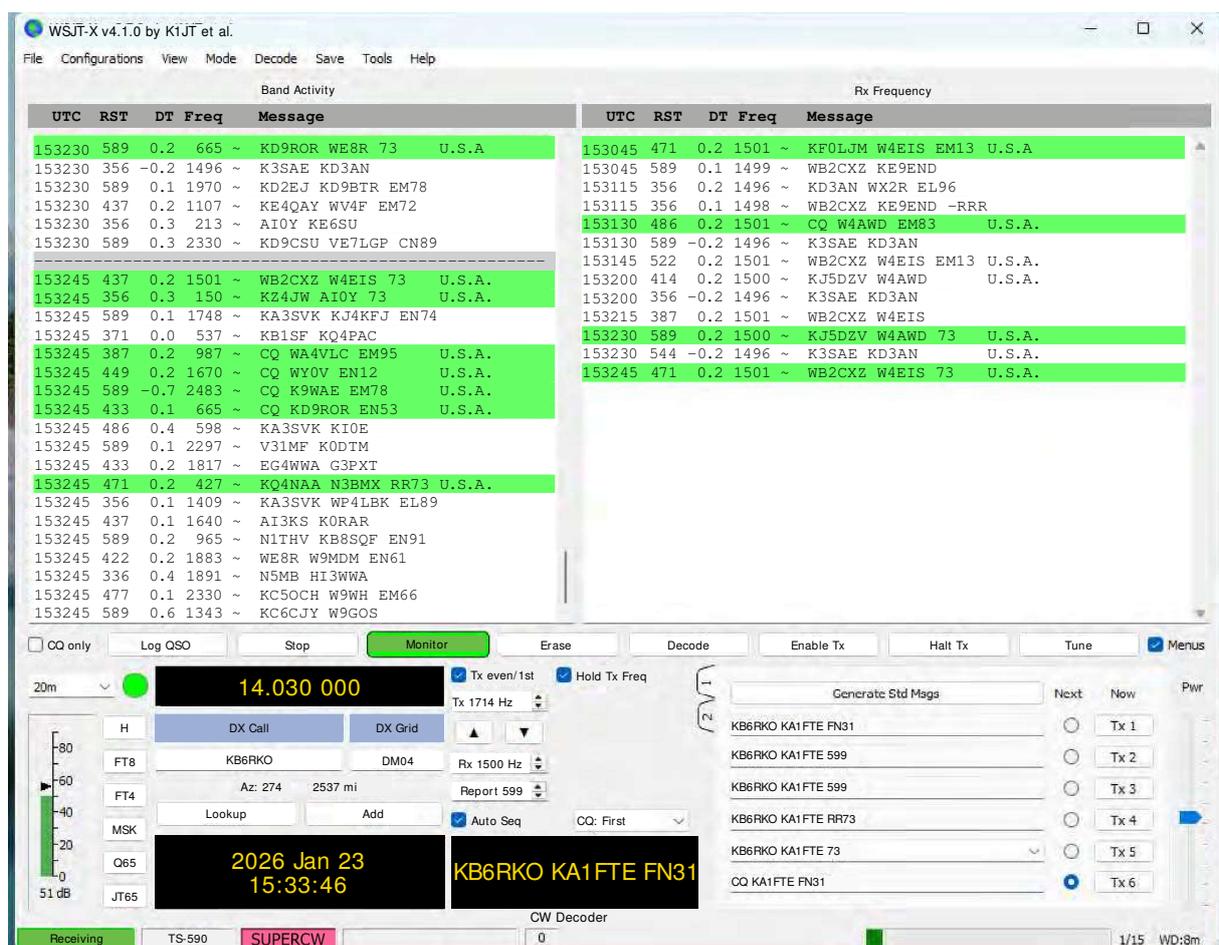


Figure 1 — *WSJT-X* rc 4.1 main window.

Frequency Selection: The *WSJT-X* pull-down menu now includes SuperCW, with the frequencies for the CW portions of the band saved in the menu. For example, when selecting 20 meters, SuperCW mode, the CAT control will tune your receiver to 14.035 MHz, covering 14.030 MHz to 14.070 MHz. The waterfall can be adjusted to show that span of the spectrum, and green and red markers that FT8 operators are familiar with will operate similarly, allowing you to select receive and transmit frequencies. Audio filtering will follow the received frequency marker to isolate that station from the rest of the stations in the waterfall.

Decode Screen: The new CW decode screen will respond to and decode the signal in the waterfall below the green marker. On-board artificial intelligence will filter the received audio to eliminate noise and fill in missing characters, similar to autocorrect on a mobile phone. If a signal is noisy and characters are lost, the auto-complete feature will make the best suggestion. With access to the worldwide database of amateur operator licenses, by process of elimination it can auto-complete a call sign if a character is missed.

Automatic Speed Adjustment: SuperCW mode will send a short FSK tone burst at the beginning of each CQ call to allow others using SuperCW mode to know that they are communicating with a *WSJT-X* client. If so, speed is automatically adjusted for the highest rate possible to complete the exchange in the fastest amount of time. Speeds of up to 150 WPM are achievable, though path conditions will regulate just how fast. Using the relative signal-to-noise ratio (SNR) calculations already built into *WSJT-X* to calculate FT8 signal reports, the SNR-WPM chart in Table 1 shows how SuperCW mode speeds will be adjusted based on received SNR figures. If the far-end station is not using *WSJT-X*, then the application will automatically adjust send speed to match.

Automatic Signal Reports: Because *WSJT-X* can already calculate SNR, Readability, Signal, and Tone (RST) signal reports can be derived from the CW audio and the relative band noise levels of the station being received. No more 5NNs — now, you'll be able to send a true "356" or "212" and know that it's been determined by the most advanced algorithms available.

"Fist" Selection: To acknowledge those who may frown upon the automation of CW, with the help of an artificial intelligence large language model, hours of live CW from around the world were recorded to create a

Table 1 — SuperCW Mode WPM Based on Received Signal Strength

Signal Strength	Received Power (dBm; Zc = 50 Ω)	WPM
S1	-121	5
S2	-115	7
S3	-109	10
S4	-103	30
S5	-97	50
S6	-91	75
S7	-85	110
S8	-79	130
S9	-73	150
S9 +10	-63	150
S9 +20	-53	150
S9 +30	-43	150
S9 +40	-33	150
S9 +50	-23	150
S9 +60	-13	150

regionalized database storing "fists." This database will allow users to emulate the sound of a particular "fist" with a simple pull-down menu selection. For example, if you would like to sound like a CW operator in Italy using a paddle, you can select Italy->Paddle, and anyone listening would be unable to tell the difference between SuperCW and an actual operator in Italy. All countries are represented in the database, and selections for the sending device emulator include straight key, paddle, and bug.

SuperFox Integration: SuperCW can be used with SuperFox for those running DXpeditions. SuperFox-SuperCW mode will allow CW to be transmitted from the fox station to nine separate hounds at once, allowing the DXpedition to answer that many stations simultaneously. Because transmit speeds must be synchronized during the transmission of nine signals at once, the DXpedition needs to determine what fixed speed to set at the start of their event, and hunting stations will need to match that speed.

CW Spotting: Finally, when operating in SuperCW mode, *WSJT-X* will post the stations it receives to the Reverse Beacon Network and PSKReporter.

The new release candidate will be available to download on April 1, 2026.

Frans Thomas Eyt, KA1FTE, has been active in weak-signal digital experimentation on HF and VHF for more than 4 decades. His interests include time-synchronized decoding techniques, low-SNR communications, and the practical integration of legacy operating modes into modern software-defined frameworks. He participates in several informal digital-mode development groups.