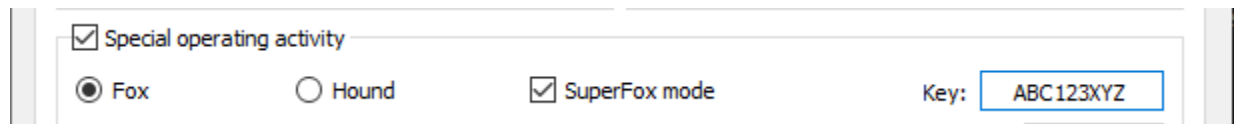


SuperFox User Guide

Joe Taylor, K1JT — June 12, 2024

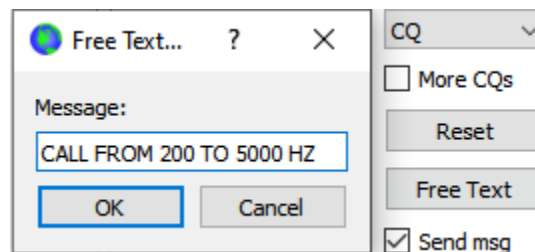
WSJT-X 2.7.0 includes **SuperFox** mode, a powerful new tool that helps DXpeditions to make digital QSOs at very high rates. Rather than sending concurrent streams of up to five normal FT8 signals, each 50 Hz wide, the SuperFox station transmits a full power constant-envelope waveform, 1512 Hz wide, conveying signal reports or RR73 acknowledgments to as many as nine different Hounds simultaneously. There is no signal-strength penalty for simultaneously transmitting to the maximum number of Hounds. Hounds chasing the DX station transmit normal FT8 signals, as in the already familiar Fox and Hound mode. SuperFox QSOs are logged as FT8 mode, and SuperFox will not make robotic QSOs. This brief guide to new features assumes familiarity with old-style Fox and Hound operation, as described here: https://wsjt.sourceforge.io/FT8_DXpedition_Mode.pdf.

SuperFox Operation requires the Fox operator to select **Special operating activity**, **Fox**, and **SuperFox mode** on the **Settings → Advanced** tab, and to enter a valid key as in this example:

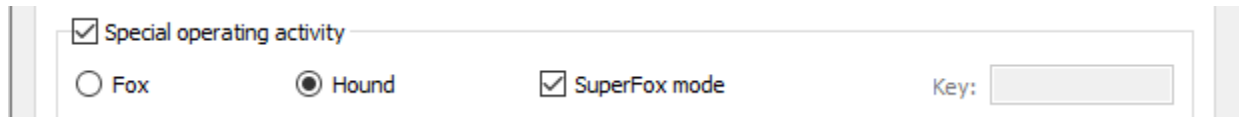


The secret key is used to create a digital signature conveyed as part of the SuperFox message and used at the receiving end to establish legitimacy of the signal. Authorized keys will be issued in advance for legitimate DXpeditions by the Northern California DX Foundation.

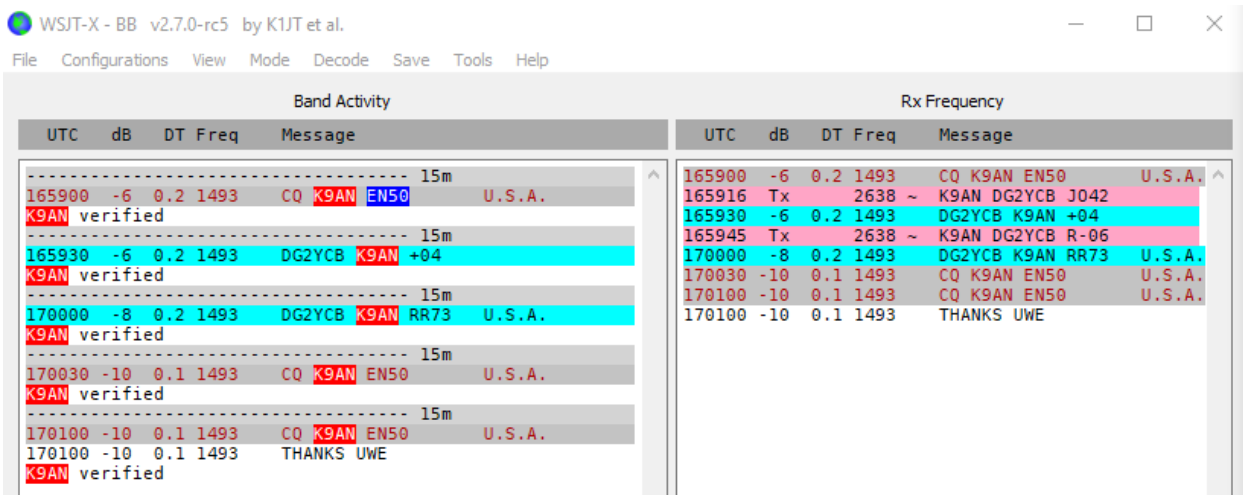
The SuperFox waveform extends from audio frequency 750 Hz upward to 2262 Hz. Standard messages include up to 9 Hound callsigns: as many as four may receive numerical signal reports to start a QSO, and the remainder receive RR73 to acknowledge that a QSO has been logged. If you check the **More CQs** box (see below), any SuperFox message will also include a CQ. Stand-alone CQ messages may include a free text message — perhaps some instructions for calling stations — and free text may also accompany a message with up to four Hound callsigns and either signal reports or RR73's. To send a text message, click the **Free Text** button, enter your desired message (up to 26 characters), and check the **Send msg** box as in this example. Use your own message, of course.



Hound Operation should begin by selecting **Special operating activity**, **Hound**, and **SuperFox mode**, on the **Settings → Advanced** tab:



With this setup *WSJT-X* will decode SuperFox transmissions in even reception intervals (those starting at 00 and 30 seconds of a UTC minute) and normal FT8 signals in odd intervals. Hounds may transmit anywhere in the audio frequency range specified by the SuperFox station, up to a maximum range 200 to 5000 Hz. Note that Hounds are not forced to transmit above 1000 Hz, and a Hound’s frequency is not automatically shifted after he is called by SuperFox. The entire QSO is conducted at the Hound’s original calling frequency. All parts of decoded SuperFox messages will appear in the left (Band Activity) panel, and messages addressed to you in the right (Rx Frequency) panel. The SuperFox decoder tests the digital signature included in each message; if valid, the transmission will be marked “<FoxCall> verified” as shown in this screen shot:



In nearly all other ways, Hound operation is identical to that used for the old-style Fox and Hound mode.

SuperFox features are available only in *WSJT-X 2.7.0-rc5* and any later releases. The Northern California DX Foundation (<https://ncdxf.org>) will be ready to accept SuperFox key requests from DXpedition organizers by September 1, 2024.