



WSJT-X

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Description

WSJT-X implements communication protocols or "modes" called **FT4**, **FT8**, **JT4**, **JT9**, **JT65**, **QRA64**, **ISCAT**, **MSK144**, and **WSPR**, as well as one called **Echo** for detecting and measuring your own radio signals reflected from the Moon. These modes were all designed for making reliable, confirmed QSOs under extreme weak-signal conditions.

JT4, **JT9**, **JT65**, and **QRA64** use nearly identical message structure and source encoding (the efficient compression of standard messages used for minimal QSOs). They use timed 60-second T/R sequences synchronized with UTC. **JT65** and **QRA64** were designed for EME ("moonbounce") on the VHF/UHF bands; **JT65** has also proved popular and effective for worldwide QRP communication at HF. **JT9** is optimized for the LF, MF, and HF bands. It is about 2 dB more sensitive than **JT65** while using less than 10% of the bandwidth. With either **JT9** or **JT65**, world-wide QSOs are possible with power levels of a few watts and compromise antennas. **JT4** and **QRA64** are optimized for EME on the VHF and higher bands, and especially the microwave bands from 2.3 to 24 GHz.

FT4 and **FT8** are operationally similar but use T/R cycles only 7.5 and 15 s long, respectively. **MSK144** is designed for Meteor Scatter on the VHF bands. These modes offer enhanced message formats with support for nonstandard callsigns and some popular contests.

As described more fully on [its own page](#), **WSPR** mode implements a protocol designed for probing potential propagation paths with low-power transmissions. **WSPR** is fully implemented within *WSJT-X*, including programmable "band-hopping".

Latest General Availability (GA) release: **WSJT-X 2.1.0**

New in **WSJT-X 2.1.0**:

- The **FT4** protocol, designed for HF contesting
- Improved FT8 waveform generation
- Low-sidelobe option for waterfall and spectrum display
- Improved UDP messaging for inter-program communication
- Improved accessibility features
- 64-bit Windows installation package
- Minor enhancements and bug fixes

Upgrading from a previous version will be straightforward. There is no need to uninstall or move any files. On first startup you may need to reset the default frequencies table to include suggested FT4 frequencies. Go to **File | Settings | Frequencies**, right-click in the Working Frequencies list, and select **Reset**.

Documentation: The [WSJT-X 2.1 User Guide](#) is available online. This document should always be your first source for help. Use your browser's search facility to find a keyword or topic.

- [English \(v2.1\)](#)
- [German \(v2.1\)](#) (OE1EQW)
- [Swedish \(v1.9\)](#) (SM7VRZ)
- [French \(v2.0\)](#) (ON4CN)
- [Norwegian \(v2.1\)](#) (LA6VQ)
- [Italian \(v2.0\)](#) (IZ8EEI)

German translations of two associated documents by Enrico Schürer, OE1EQW:

- [FMT User](#)
- [QRA64 EME](#)

If you plan to use FT8 DXpedition Mode, be sure to read the [FT8 DXpedition Mode User Guide](#).

- English: [FT8 DXpedition Mode](#) (K1JT)
- German: [FT8 DXpeditions-Modus-Handbuch](#) (OE1EQW)
- Polish: [FT8 Tryb Ekspedycji DX dla stacji Hound](#) (SP9TTG)
- Norwegian: [FT8 DX-pedisjonsmodus Bruerveiledning](#) (LA6VQ)
- Finnish: [FT8 DXpedition Mode Käyttäjäopas \(Finnish\)](#) (OH1KH)
- Japanese: [FT8 DXペディションモードユーザーガイド](#) (JA7UDE)

- Portuguese: [FT8 DXpedition Mode](#) (CT1EKD)
- French: [Mode FT8 DXpedition Guide de l'utilisateur](#) (F8RZ)
- Dutch: [FT8 DXpeditie-modus Gebruikershandleiding](#) (PD0NUD)
- Spanish: [Guia de usuario del modo Expedición DX de FT8](#) (EA4TV)
- Chinese: [FT8 远征模式 使用指南](#) (BG2KAJ)
- Italian: [FT8 DXpedition Mode](#) (PY1ZRJ)
- Russian: [FT8 мода для DXpedition](#) (UNOLL)
- Korean: [FT8 DXpedition Mode](#) (HL3AMO)

Versions of *WSJT-X* labeled with a "-rcx" suffix, for example *WSJT-X* v2.1.0-rc3, are **Release Candidates** sometimes offered temporarily for beta testing purposes. You should upgrade to the GA release when it becomes available. The -rc# program versions are not suitable for long-term general use.

Installation packages for WSJT-X 2.1.0

Windows:

- Version 2.1.0: [wsjtx-2.1.0-win32.exe](#). (32-bit Vista, Win 7, Win 8, and Win 10).
- Version 2.1.0: [wsjtx-2.1.0-win64.exe](#). (64-bit Vista, Win 7, Win 8, and Win 10).

Linux:

Installation instructions for Linux can be found [here](#) in the User Guide. Download the package file appropriate for your system, from the list below. (Versions installable with "apt-get" and "yum" will be made available as soon as our package maintainers create the packages.)

- Version 2.1.0
 - Debian, Ubuntu 18.04 LTS, ... (32-bit): [wsjtx 2.1.0 i386.deb](#)
 - Debian, Ubuntu 18.04 LTS, ... (64-bit): [wsjtx 2.1.0 amd64.deb](#)
 - Fedora 29, RedHat, ... (32-bit): [wsjtx-2.1.0.i686.rpm](#)
 - Fedora 29, RedHat, ... (64-bit): [wsjtx-2.1.0.x86_64.rpm](#)
 - Raspbian Stretch, ARMv6, ... : [wsjtx 2.1.0 armhf.deb](#)

Note: these packages are unlikely to install properly on Linux distributions with required dependencies at lower

versions than those on the named distributions. In such cases building from source is the correct way to install *WSJT-X* 2.0.

Macintosh macOS:

Installation instructions for version 2.1.0 can be found [here](#) in the User Guide.

- Version 2.1.0 for OS X 10.10 (macOS) and later: [wsjtx-2.1.0-Darwin.dmg](#)

Source Code:

WSJT-X is licensed under the terms of Version 3 of the GNU General Public License (GPL). Development of this software is a cooperative project to which many amateur radio operators have contributed. If you use our code, please have the courtesy to let us know about it. If you find bugs or make improvements to the code, please report them to us in a timely fashion.

Build and installation instructions are in the INSTALL file inside the tarball.

- Source code for *WSJT-X* 2.1.0: [wsjtx-2.1.0.tgz](#)

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