Enjoy **FT8** From Almost Anywhere

J. Robert Witmer, W3RW

Imagine hunting 6-meter DX at a restaurant while eating breakfast, or making an all-time new DX contact while waiting for a flight. I’ve found myself operating remotely in these types of situations, and many others, using nothing more than my smartphone. If you think this type of operating is complicated and expensive, prepare to be surprised!

My approach to remote FT8 operating combines **WSJT-X** software and a remote computer-control program called **TeamViewer**. Both **WSJT-X** and **TeamViewer** are free for personal, nonbusiness use. **WSJT-X** is available at Dr. Joe Taylor’s, K1JT, website, [https://physics.princeton.edu/pulsar/k1jt/wsjtx.html](https://physics.princeton.edu/pulsar/k1jt/wsjtx.html), and **TeamViewer** at [www.teamviewer.com/en-us/](http://www.teamviewer.com/en-us/). The combination works well because, for FT8, audio streaming is not required.

We’ll start with a description of a single-band remote operating setup, and then add suggestions for a multiband approach.

**Step 1: Install WSJT-X and TeamViewer at Your Station**

Let’s start with a single-band configuration. If you haven’t already done so, the first step is to install and configure **WSJT-X** software at your station computer. I assume your station hardware is already set up for digital operating. That is, you have a computer/transceiver interface installed, or you own a transceiver with a built-in interface that plugs directly into one of your computer’s USB ports.

Follow the configuration instructions in the **WSJT-X** user guide. I recommend keeping screenshots of your **WSJT-X** settings/preference menus.

The author relaxes outside while making contacts on 6-meter FT8 via remote control from his Fire HD tablet.

Use a free software application to operate FT8 and other digital modes remotely.
once WSJT-X is working well. On more than one occasion the screen-shots have proved helpful in resolving issues.

For those new to FT8, I suggest spending some time operating it to become comfortable with how the mode functions and work out any kinks in the software. As soon as you feel confident that everything is running smoothly, it is time to add TeamViewer.

**TeamViewer**

Go to the TeamViewer website and select the TeamViewer software that is compatible with your station computer. Select the “Full Version” and establish your free TeamViewer account. Follow the download and installation instructions carefully. See the sidebar, “TeamViewer Preference Menu Settings,” for some suggestions.

As far as the TeamViewer menu on your station computer is concerned, you’re only interested in the information on the left side of the window under ALLOW REMOTE CONTROL. Record the TeamViewer assigned ID number and password (see Figure 1). You will need this information when accessing your station computer remotely. Note that each time TeamViewer starts it generates a new access password, but the ID number does not change.

**Step 2: Install TeamViewer on Your Smartphone, Tablet, or Laptop**

Once TeamViewer is running on your station computer, download the appropriate TeamViewer app for your smartphone or tablet from the Apple iTunes app store or Google Play.

If you intend to use a laptop rather than a smartphone or tablet, install the full version software from the TeamViewer site. The advantage of using the full version on your laptop is that you can add your station computer to its list of remote contacts and you will never have to remember the station-computer password; it is transferred to your laptop from your TeamViewer account automatically.

If you access the TeamViewer app at your remote location, you’ll be prompted to enter the ID (see Figure 2). Select REMOTE CONTROL and, if you are not using the full version on a laptop, you’ll be prompted to enter the previously referenced password. The app will remember the ID and the last entered password for that ID, simplifying the future log-in process.

Remember that if you restart your station computer for any reason, you’ll be assigned a new password. Unless you leave your station computer and transceiver powered up 24/7, you’ll need to jot down the assigned password each time you fire up your station with app-based remote operating in mind.

To repeat, however, if you are running the full version on a laptop, and you’ve included your station computer in your “My Computers” list, all you have to do is double click your mouse cursor on the station computer’s name.

**Single-Band Operation**

Now do some tests to see how everything is working. Running remote from the next room provides a quick way to make menu and preference changes if required (see Figure 3).

Controlling the cursor at the station computer takes some getting used to if you’ll be using a smartphone or tablet, particularly when adjusting levels and scrolling. Experiment to see what works best for you. Remote operation with a laptop or desktop computer is usually smoother. With a good internet connection, it seems as though you are operating your station computer directly!

I operated on 6-meter FT8 remotely during the 2018 sporadic-E season. My Kenwood TS-590SG transceiver fed a manual tuner and balun to match the antenna. Thanks to the amazing performance of FT8, I managed to work several new DXCC entities, including VP5DR during breakfast while on vacation.

For safety’s sake, enable the “watchdog timer” in the WSJT-X software on your station computer. That way if WSJT-X gets stuck in the transmit mode, the software will shut down automatically. Most modern transceivers have a similar watchdog function, so be sure to enable it as well.

In addition to running WSJT-X on your station computer, you can use this remote setup for other digital-mode applications because they also do not require audio streaming. You might run DigiPan for PSK31 (www.digipan.net), or fldigi (www.w1hkj.com) for many other digital modes.
Operating on one band is fun, but it is even more enjoyable to be able to hop from one band to another via remote control. To achieve this, however, you’ll need a multiband antenna system and computer control of your transceiver and other devices.

If you have your station configured for computer control of your transceiver (CAT), WSJT-X will use it to switch your radio between bands. All you have to do is click the dropdown menu on the main screen and select the band you want. Your radio will change frequency automatically.

If you have a multiband antenna with acceptable SWRs on your favorite bands, you’re in luck. This is an easy step to implement and operation is essentially the same as single band.

However, if you need to control your radio’s internal antenna tuner to achieve a match to your antenna, or possibly an external “smart tuner,” you may need to install software that will allow you to access your transceiver and other equipment through your computer. Beware that, in some instances, the WSJT-X CAT control may conflict with another transceiver-control application. If so, you’ll need to close WSJT-X, start the control software, make whatever adjustments are needed, close the control software, and then restart WSJT-X. Of course, this can all be done remotely.

Other Considerations

✔ Be sure your computer is not set, via some type of internal time setting, to shut down or go to sleep to the extent it cannot be awakened via TeamViewer. You may have to experiment to find what settings need adjustment.

✔ A related issue is automatic operating system upgrades. Try to schedule auto updates to occur when you are not operating remotely. If the computer with WSJT-X restarts, you will lose access via TeamViewer. (When the computer and TeamViewer restart, TeamViewer assigns a new password, which unfortunately you probably won’t have knowledge of when operating remotely!)

✔ Consider adding a Wi-Fi controlled power outlet for your transceiver’s power supply, but be sure it is tolerant of RFI. It is always a good idea to have an alternative means to shut down your radio if necessary.

✔ Keep in mind that the TeamViewer software on your remote laptop or mobile device will log you out after approximately 3 minutes or less if your device goes to sleep, or if you switch to another app. If it does disconnect you, simply re-enter your station computer’s ID and password (if required) to resume access. It’s important that you select KEEP CURRENT for the random password function in the TeamViewer ADVANCED menu tab.

Figure 3 — An example of operating FT8 by remote control. The author had enough room available on his laptop screen to open a web browser and display the PSKReporter and DX Watch pages as well.
Bob Witmer, W3RW, was first licensed as K3VAX in 1962 and upgraded to an Amateur Extra-class license in 1967. Bob has a BSEE from Drexel University and worked initially at ISC, in Lancaster, Pennsylvania. At ISC, he worked on a wide range of projects — and with Ed Clegg on Amateur Radio products for several years — before focusing on defense electronics programs. After moving to the Philadelphia area in 1988, Bob had management responsibility for multiple defense contractor electronic warfare programs. He also served 10 years as a Montgomery Township Supervisor, helping to establish the township’s first stand-alone Amateur Radio station capability.

Now semi-retired, his interests include working DX and improving his 160-meter station capabilities — though available time is limited by grandkid activities. Bob can be contacted at w3rw@arrl.net.

TeamViewer Preference Menu Settings

These are the setting/preference menu selections I have been using. Not all versions of TeamViewer have the same settings selections and versions change, so you may have to check the TeamViewer Community Knowledge Base website for the latest information.

For the station computer versions, in the Mac OS versions of TeamViewer, preference menus are found under the TeamViewer pulldown menu. For Windows TeamViewer, preference menus are found under the OPTIONS tab, under EXTRAS. Your results and settings may vary.

Station Computer
GENERAL TAB
Start TeamViewer with System — Checked
Other: No change from initial settings

REMOTE CONTROL TAB
Quality: Automatic quality selection (Optimize Quality)
Remove remote wallpaper — Checked
Show you partner’s cursor — Checked

SECURITY TAB
Password strength: Selection the level of security — do not check DISABLED

ADVANCED TAB
Choose KEEP CURRENT for the Random password after each session selection.
Choose FULL ACCESS for the ADVANCED settings for connections to this computer.

Remote Device
CONTROL
Quality: Automatic quality selection
Screen resolution: (Don’t change)
Remote Cursor: Off — not highlighted

ACCESS CONTROL
View screen: Allowed
Remote control: Allowed
Control remote TeamViewer: Allowed

ADVANCED SETTINGS
Remove remote wallpaper — Checked

✔ If you’re running an external monitor on your station computer, you may want to consider running “headless” (without a monitor) when operating remotely. Both my Mac and PC use external HDMI connected monitors. To save power when I’ll be away for more than a day or two, I replace the actual HDMI connection with an HDMI Display Emulator plug, available for about $8 on Amazon. The plug essentially tricks your computer into behaving as though a display is still connected. This allows you to remotely screen share with greater ease and reliability. Without this plug, and when your monitor is disconnected, your computer’s graphics card may shut down, which will force the shared screen image to be drawn by your CPU alone. That tends to be slow and may result in image freezing at your remote location.

✔ Finally, before you disconnect from TeamViewer, check to make sure you’ve “parked” your remote mouse cursor in a neutral area in the WSJT-X application. You don’t want to return to remote operation and find that you’ve inadvertently initiated an unwanted WSJT-X action, such as TUNE. Also, check to be sure the TeamViewer SESSION LIST window is moved out of the way be clicking on the arrow on the left-hand side.

Summary

By combining WSJT-X FT8 operation with a remote desktop control program such as TeamViewer, you can add an exciting new dimension to operating. Operating remotely during breaks in the action while participating in other events can be a great way to catch elusive band openings and hopefully work a new one!

If you’re not a fan of FT8, the TeamViewer approach described here can be used to remotely control other station computer applications.

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For updates to this article, see the QST Feedback page at www.arrl.org/feedback.

Strays

Bill Bailey, K4BUY, is looking for hams or clubs interested in conservancy to participate in a “conservancy to conservancy” on-air communication program. For more information, contact Bill at bailey4141@comcast.net.