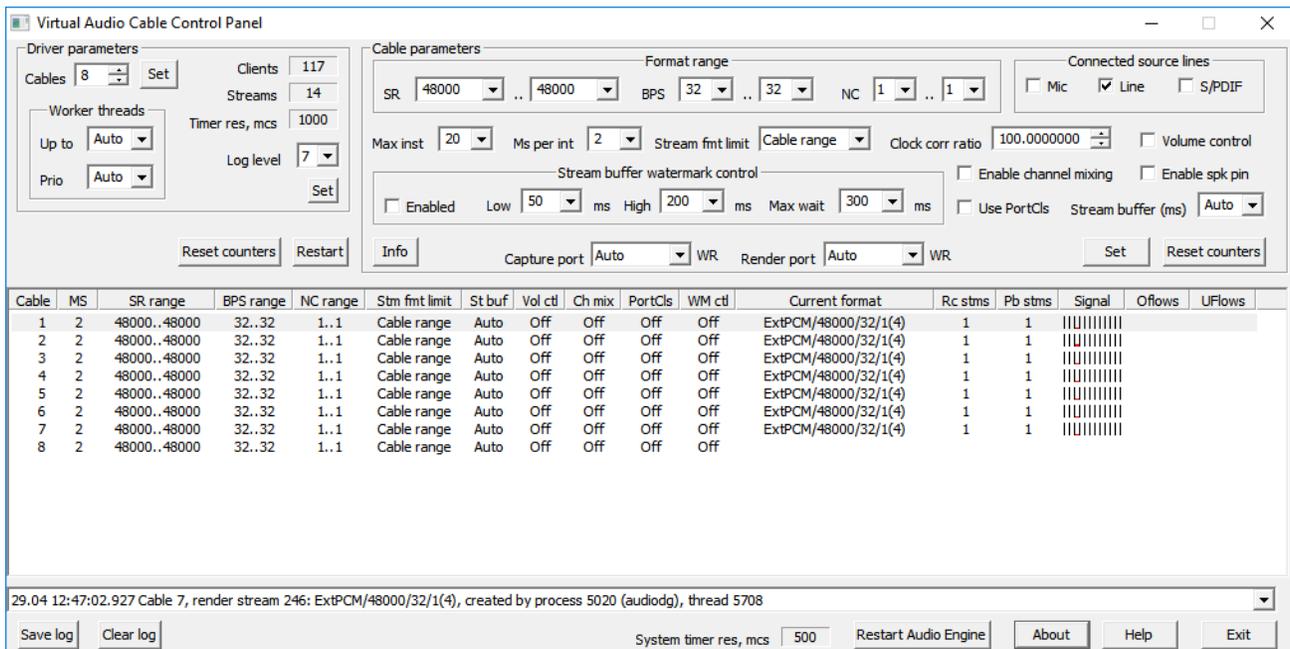


Using FT8StartUp v 2.0
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The purpose of FT8StartUp is to expedite setting up multiple instances of WSJT-X in order to send FT8 spots to Aggregator and ultimately the Reverse Beacon Network.

Preliminaries:

1. Set up Skimmer Server to run with CWSL_Tee and cover your chosen bands, up to eight if your SDR supports that many. Wes, WZ7I, describes how to do this in a blog post at <http://reversebeacon.blogspot.com/2013/03/magic-with-qs1r-two-apps-at-once.html>
2. Install WSJT-X v1.8.0 or v1.9.0. Don't use the v1.9 release candidates. If an instance of WSJT-X is not running on the same computer as Aggregator you will need to change the IP address in WSJT-X's File/Settings/UDP Server/UDP Server: box to either a broadcast address (ending in .255) or the address of the Aggregator computer.
3. Install virtual audio cables, at least one for each band you want to cover. The program I used for virtual audio cables came from <http://software.muzychenko.net/eng/vac.htm>. The screen shot below shows the settings I use for Virtual Audio Cables on a Windows 10 computer. Pay particular attention to the SR and BPS ranges. For Windows 7 you should set the BPS range to 24 .. 24.

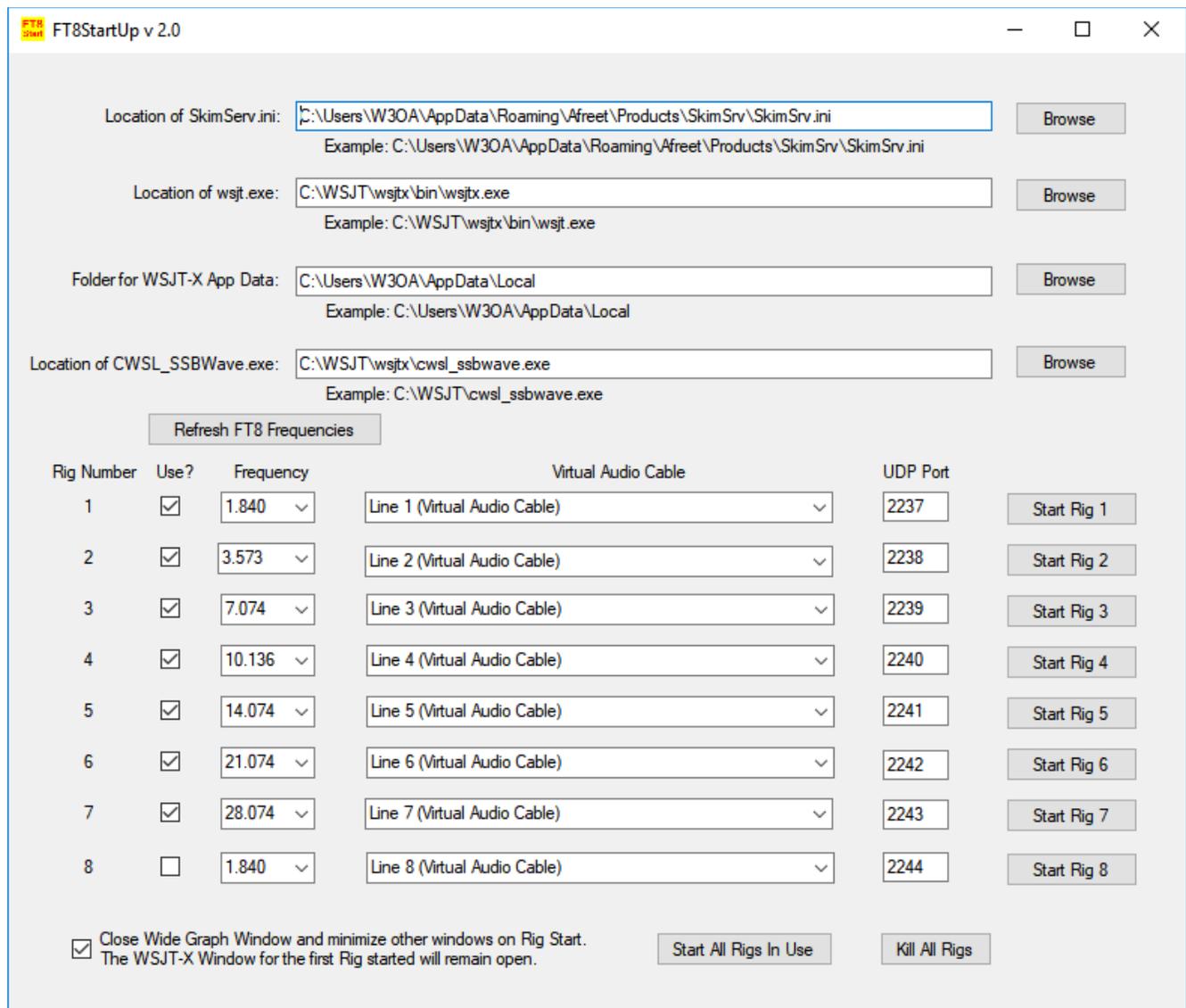


4. Wes also advises that if you are running Windows 7 you need to add an additional step. Go to the Control Panel, Hardware and Sound, Sound, Manage audio devices. Click on the Playback tab, select "Line 1, Virtual Audio Cable". Then

- Click on Properties, Advanced, and from the pulldown menu select "1 channel, 24 bit, 48000 Hz (Studio Quality)", and then "OK". Repeat this for each VAC. Then repeat this process for the Recording tab of each of the Virtual Audio Cables.”
- Obtain and store CWSL_SSBWave.exe in a known location. I suggest the [C:\WSJT](https://github.com/alexranaldi/CWSL/blob/master/bin/CWSL_SSBWave.exe) folder. Get CWSL-SSBWave.exe from https://github.com/alexranaldi/CWSL/blob/master/bin/CWSL_SSBWave.exe Click the "Download" button to initiate the download.
 - Store FT8StartUp.exe in a location that is not protected by Windows.

Operation:

- Start FT8StartUp. You should see a window as shown below. The input boxes will be empty.



- Use the “Browse” buttons in the top four rows to specify the four file locations the

program needs to operate. If you installed Skimmer Server and WSJT-X in their default locations the “Browse” buttons should open their File Dialogue in the correct location. Note that the first, second, and fourth rows ask for the relevant .exe. The third row asks for a folder. See the examples under each row.

3. Each of the rows marked “Rig Number” 1 through 8 will contain the parameters FT8StartUp will use to start an instance of WSJT-X. After specifying the file locations in Step 2 click the “Refresh FT8 Frequencies” button. FT8StartUp will read the SkimServ.ini file you specified to determine which FT8 standard frequencies your SDR is covering and place those frequencies in each of the “Frequency” combo boxes.
4. Fill in the parameters for the “Rig Number 1” line to indicate how you want the first WSJT-X instance to operate. Use the combo boxes to select the frequency and the Virtual Audio Cable. The “UDP Port” specifies the port WSJT-X will use to send messages to Aggregator. Each port number must be unique, not used by any other application on this computer. Enter the same port number on Aggregator's “FT8” tab (see the next page for more information on setting up Aggregator).
5. Now Click the “Start Rig 1” button. FT8StartUp will start an instance of WSJT-X and CWSL_SSBWave. You should see their windows open up and the programs should operate normally.
6. Repeat steps 4 and 5 for any additional rigs you want to set up.
7. Click the “Kill All Rigs” button to kill all the instances FT8StartUp has started.
8. The purpose of the “Start All Rigs In Use” button is to provide a convenient method to start multiple rigs. It will start all the rigs that have a check in the “Use?” check box. Give it a try.
9. There is another check box called “Close Wide Graph and Minimize other windows on Rig Start”. It does what it says and is provided to minimize use of system resources. The first WSJT-X window is left open because my experience led me to believe this improved decoding during long periods of unattended operation.

Automate Start Up. FT8StartUp will accept a command line argument that causes it to simulate a user clicking the “Start All Rigs In Use” button when it starts. I setup a desktop shortcut with a target that looks like C:\WSJT\FT8StartUp.exe -autostart to do this.

Aggregator:

Version 5.0 has a new tab, "FT8", added specifically to receive FT8 spots via UDP messages. The text in the upper left corner explains how to use this feature. Note that the intent was to add FT8 spots to a node already skimming for CW or RTTY spots. Consequently, a connection using the Primary Skimmer Connection on the "Connections Tab" is still required.

Aggregator 5.0

Status Spot Filters Connections Patt3Ch.lst ini Files Skimmer Traffic Combined Skimmers Secondary Skimmers RTTYSkimServ FT8

Aggregator can monitor up to eleven instances of WSJT-X or JTDX for FT8 spots via their UDP messages
 Each row in the table below sets the parameters to use for one instance or "source".
 The first column shows the Source Number Aggregator uses to identify the source of spots it processes.
 Place a check in the "Use?" box if you want Aggregator to accept spots from that source.
 Enter the port number that source is using for sending UDP messages. Each should use a unique port.
 Aggregator will apply a calibration factor you specify to the dial frequency WSJT-X reports.
 Use 1.0 for a well calibrated receiver.
 Make all the needed changes to all the parameters and then click the "Apply Changes" button.
 Aggregator treats messages that start with "CQ" or are in the format "call call report" as CQ messages.
 All such messages received are shown in the box on the right.
 Aggregator treats CQ message received within 10 minutes of the last CQ message from that call as a dup
 and does not process the message further.

Source Number	Use?	Port Number	Calibration Factor	Dial Frequency	Time Last UDP CQ Message
11	<input checked="" type="checkbox"/>	2237	1.000	1840.0	10:17:59Z
12	<input checked="" type="checkbox"/>	2238	1.000	3573.0	10:52:15Z
13	<input checked="" type="checkbox"/>	2239	1.000	7074.0	10:52:15Z
14	<input checked="" type="checkbox"/>	2240	1.000	10136.0	10:51:59Z
15	<input checked="" type="checkbox"/>	2241	1.000	14074.0	10:52:14Z
16	<input checked="" type="checkbox"/>	2242	1.000	21074.0	2:49:29Z
17	<input checked="" type="checkbox"/>	2243	1.000	28074.0	1:44:44Z
18	<input type="checkbox"/>	4641	1.000		
19	<input type="checkbox"/>	2245	1.000		
20	<input type="checkbox"/>	2246	1.000		
21	<input type="checkbox"/>	2247	1.000		

Apply Changes

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12 N4TB N5PRE R+08 spot generated
12 CQ WA30GQ FM09 considered a dup
13 CQ C08CY FL20 considered a dup
13 CQ W4HHN FM05 considered a dup
15 CQ KP4PKG FK78 spot generated
12 CQ KF5BA EM50 considered a dup
13 CQ N59I EN64 considered a dup
12 CQ AB4WL EM63 spot generated
13 CQ K2PS EL98 considered a dup
13 CQ W8KF EN81 considered a dup
13 CQ ZL1HX RF73 considered a dup
12 CQ AB0RX EM48 considered a dup
13 CQ KA1YQC FN42 considered a dup
15 CQ KP4JRS FK68 considered a dup
14 CQ K4TFT EM70 considered a dup
15 CQ YV5AAX FK60 considered a dup
13 CQ N4PGJ FN31 spot generated
13 CQ N5YT EM51 considered a dup
14 CQ C08LY FL20 considered a dup
12 CQ WA30GQ FM09 considered a dup
13 CQ AA5WH EL09 considered a dup
13 N4ULE W2GHD R+02 spot generated
13 CQ C08CY FL20 considered a dup
13 CQ W4HHN FM05 considered a dup
13 CQ WB0RUR EM26 considered a dup
12 CQ KF5BA EM50 considered a dup
12 CQ K4EZM EL97 spot generated
12 CQ AB4WL EM63 considered a dup
13 CQ W8KF EN81 considered a dup
13 WB2REM ZL1HX R-11 considered a dup
13 CQ K2PS EL98 considered a dup
13 CQ 7L1WII QM06 considered a dup
15 CQ KP4JRS FK68 considered a dup
13 CQ N4PGJ FN31 considered a dup
14 CQ K4TFT EM70 considered a dup
12 CQ AB0RX EM48 considered a dup
13 CQ N5YT EM51 spot generated
14 CQ C08LY FL20 considered a dup
13 CQ AA5WH EL09 considered a dup
13 CQ N59I EN64 considered a dup
13 CQ C06HLP FL02 considered a dup
13 CQ C08CY FL20 considered a dup
13 CQ W4HHN FM05 considered a dup
13 CQ WB0RUR EM26 considered a dup
15 CQ KP4PKG FK78 considered a dup
12 CQ KF5BA EM50 considered a dup
12 CQ K4EZM EL97 considered a dup
12 CQ N4TB EL97 considered a dup
12 WA30GQ W2HTS R+10 spot generated
12 CQ AB4WL EM63 considered a dup
13 CQ W8KF EN81 considered a dup
13 CQ K2PS EL98 considered a dup
  
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