

Quick Start for the CW Simulator

Introduction – The Simulator consists of three main parts:

1. an application running on the Arduino Nano that generates Morse in response to commands from the PC application received over the USB connection;
2. a Nano and signal conditioning subsystem consisting of three digital potentiometers and a buffer amplifier that provides the final audio to the user headphones;
3. an application running on the PC which provides the logging interface for the user.

For this Quick Start Guide it is assumed that you have built, or otherwise obtained, the first two items and are ready to complete the implementation by installing the third item and integrating the pieces.

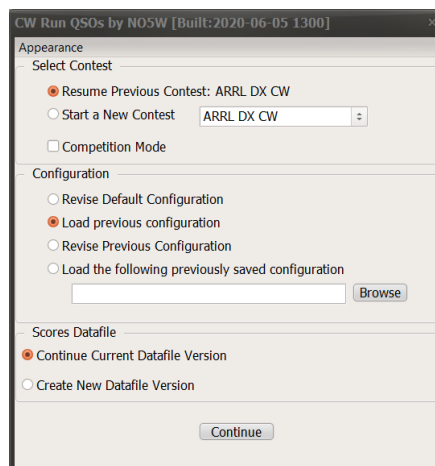
Connection to PC – Connect the CW Simulator to the PC using a USB cable with USB-A on one end and Mini-USB-B on the other. Once connected to the PC the red LED on the simulator should light and the PC may provide a message that the device is ready for use. If you are unfamiliar with the use of Device Manager see the steps outlined in the appendix. As described in the appendix go into Device Manager and under Ports (Com and LPT) find the port that the Nano is connected to. If necessary, unplug the Nano and see which of the items under Ports disappears. Make note of the port connected to the Nano.

PC Application Code – The executable for the PC that provides the user interface as well as the command interface to the Arduino is available for download from the [CW-Simulator](#) page of the [NO5W website](#).

1. Follow the instructions on that page to download the install package which is a zip file
2. Extract the files from the package and run the setup file (Setup-CWRunQ2-0-1.exe) to install the PC application
3. Following this you should find a CWRunQso icon on your desktop

Check the Operation of the PC and Arduino - Now that you have the PC application and the Morse Generator installed it is time to check out how they operate together. To do this perform the following steps using the CWRunQso application.

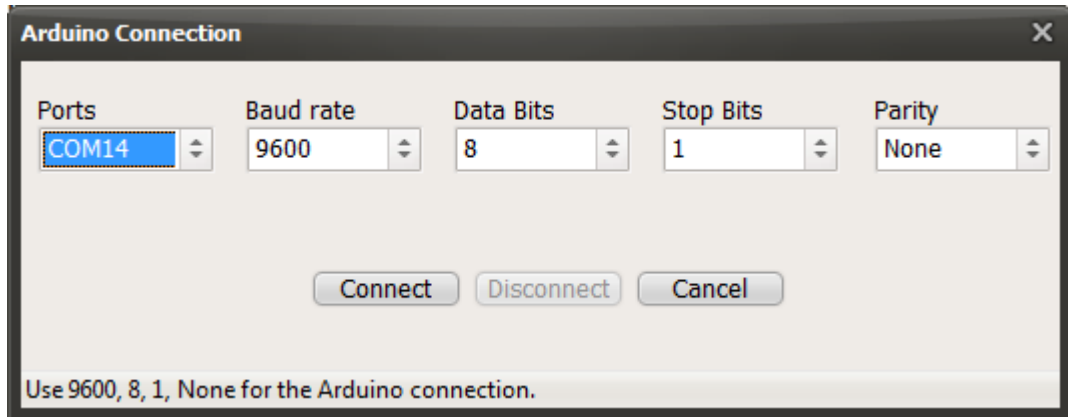
4. Double-click on the CW Run Qso icon to open the following Start Up form



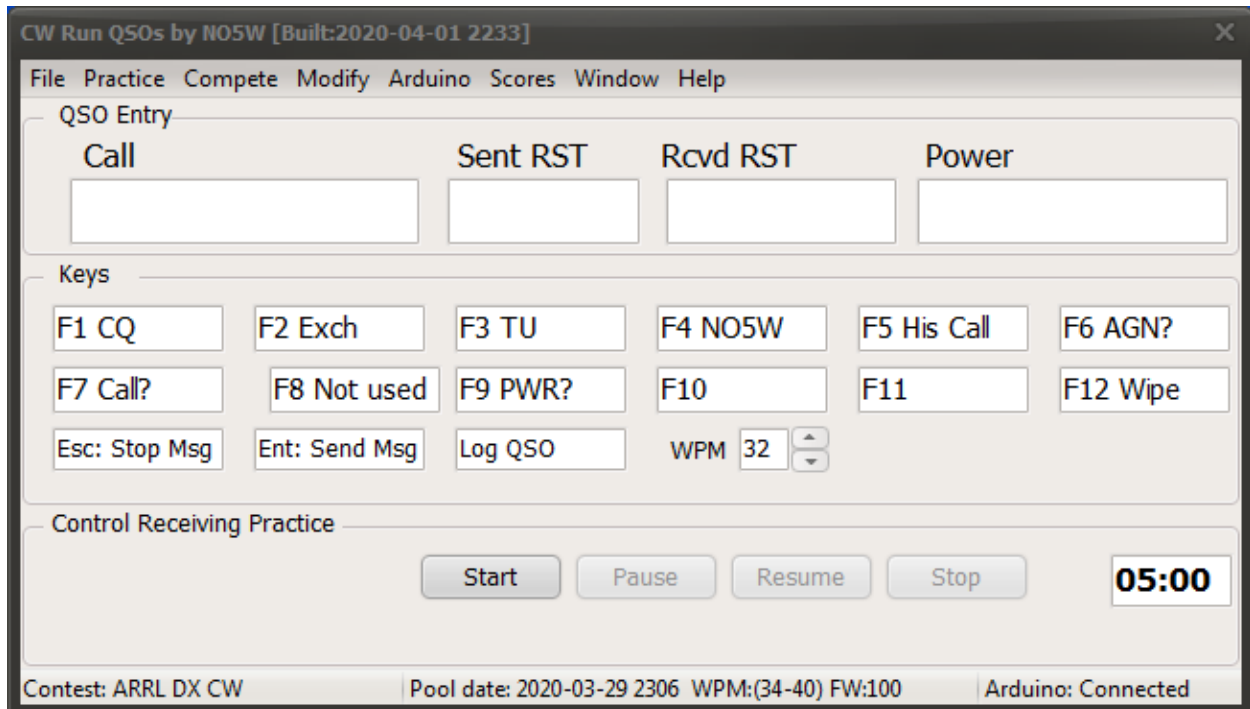
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For the purpose of this quick start just choose to **Resume Previous Contest** and to **Load Previous Configuration**. Another document, available from menu **Help | User Notes** describes in detail how to personalize and use the application.

5. On clicking on the Continue button of the Start Up form, the following dialog for setting up the Arduino Connection will be presented. Use the Ports dropdown to select the port being used by the Nano, leaving all other items unchanged.

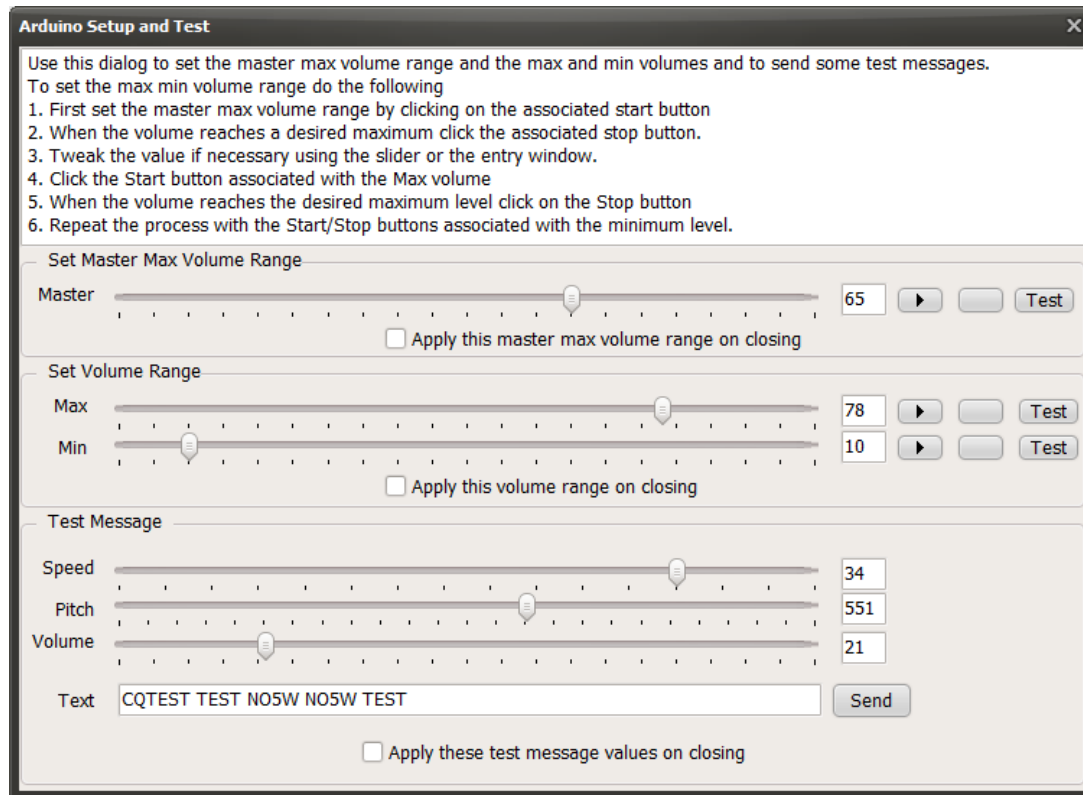


6. Clicking on the Connect button will result in the following main form.

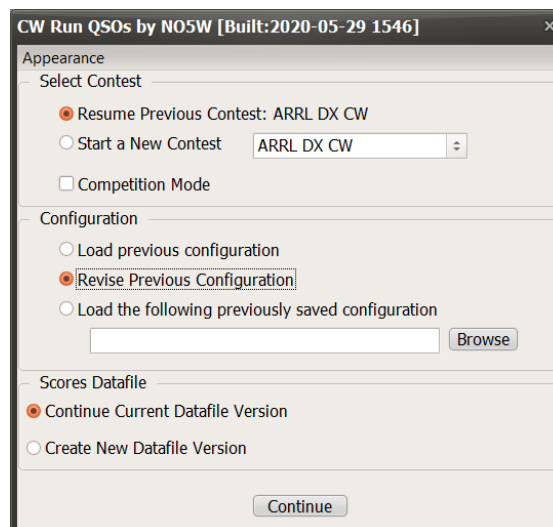


7. Make sure your headphones are plugged in to the port next to the USB port and use the menu item **Arduino | Setup and Test** to access the following dialog.

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8. Use this dialog and the process described at the top of the form to set the Master Max Volume Level, the Volume Min-Max Range of responding stations as a percentage of the Master Max Level and to generate a Test Message. Start with the values already loaded in the program and make adjustments and experiment as desired, using the Test and Send buttons to check how the settings sound.
9. Close this dialog and obtain a copy of the User Notes using the menu item **Help | User Notes**.
10. Now exit the application and restart it choosing the option to **Revise Default Configuration** and follow the User Notes to personalize the application.



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Appendix – Using Device Manager to Determine the Port Assigned to the Simulator

Windows 7 – Do the following

1. Click on the Start button
2. Click on Control Panel
3. In the Search Control Panel box type device manager
4. On the resulting page click on Device Manager
5. On the resulting page open the Ports (COM & LPT) item by clicking on the arrow
6. With the USB cable connected to the Simulator plug the USB cable into the PC and observe the added port
7. The com port found in the previous step will be the port you will select when connecting the Arduino

Windows 10 – Do the following

1. Type Device Manager In the search window next to the Start button
2. In the resulting pane click on Open Device Manager
3. Plug the USB cable connected to the Simulator into the PC
4. Find the item Ports (COM & LPT)
5. Note which item is added (removed) when you plug in (unplug) the USB cable from the Simulator
6. The com port found in the previous step will be the port you will select when connecting the Simulator's Arduino

You should only have to do the above one time but, if you encounter difficulties getting the Simulator to connect, one of the first things to do is to use the above steps to determine which port is being assigned to the Simulator.