

# SO2R Mini Station Installation and Cabling

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The SO2R Mini uses 3.5mm jacks for all external connections, so finding cables that plug into it proves to be easy. There are four connections that must be made with each radio. These are PTT and CW outputs, stereo receive audio input, and microphone output. All radio-side connections are made on the rear of the SO2R Mini, the side with six 3.5mm jacks.

The front of the SO2R Mini provides for the user-side inputs, the microphone, headphones, paddle or key, and footswitch. Each of these inputs uses a slightly different pinout, so be sure to read the below information. All of the audio-based connections should require no adapters or dongles for most radios. For example, on an Elecraft K3, all that is needed to connect audio-related functions are two 3.5mm-3.5mm cables, nifty! For other radios. Such as Icom, Yaesu, or Kenwood, you may need to use a 3.5mm to ¼ inch cable for RX audio, and a Heil-style dongle may be needed for transmit audio.

The PTT and CW outputs are slightly different. They share a common 3.5mm jack. The sleeve is a shared ground between the two outputs. CW output keying is on the jack tip, while PTT is on the sleeve. This makes it very easy to use commonly available Tip-Ring-Sleeve (Stereo) to dual Tip-Sleeve (Mono) cables often designed for audio applications. These can be found with all three jacks being 3.5mm, or more commonly, and conveniently for most Japanese radios, dual ¼ inch jacks. Below is a description of each external 3.5mm jack on the SO2R Mini.

## Jack Descriptions:

Footswitch Input: Tip - switched hot, Ring - NC, Sleeve - GND.

Microphone Input: Tip - hot, Ring - NC, Sleeve - GND.

Paddle Input: Tip - dot, Ring - dash, Sleeve - GND.

Phones Output: Normal phones pinout. Tip - left, Ring - right, Sleeve - AF GND.

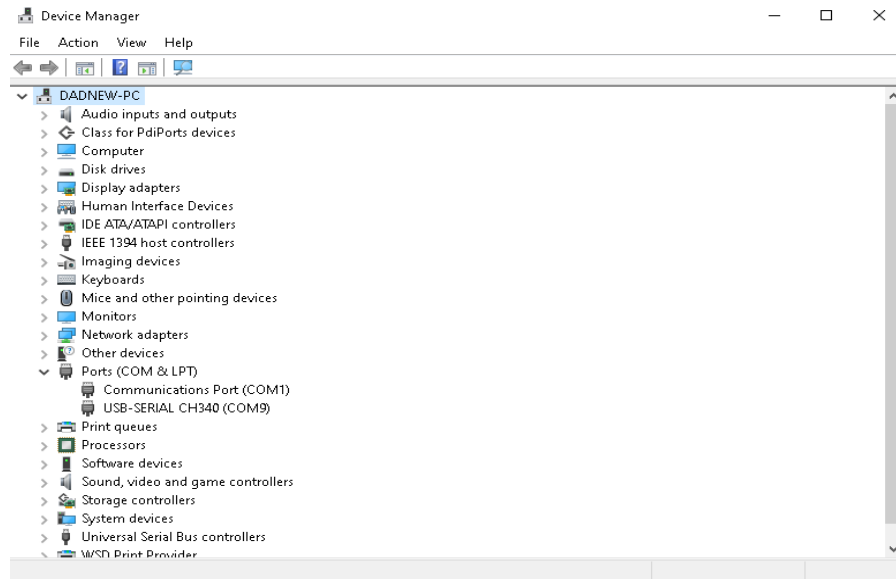
RX Inputs: Normal headphone convention. Tip - left, Ring - right, Sleeve - AF GND.

Keying/PTT Outputs: Tip - CW, Ring - PTT, Sleeve - GND.

## Computer Side Connections:

Once all of the analog-side cabling is hooked up, attach a Mini USB to USB A cable between a computer USB port and the SO2R Mini. You should see some activity on the computer, the computer will normally attempt to install the serial driver by itself. After a minute or so, if you open Device Manager, Ports (COM & LPT).

There you see all of the serial devices connected to the PC. One of these devices will be labeled "USB-SERIAL CH340." Make note of which port number that device is attached to. You will need that for configuring the SO2R Mini with your logging software.



**Figure I:** Device Manager showing the SO2R Mini Interface (COM9)

### What If That Doesn't All Happen?

If your computer didn't load the driver automatically, so you'll have to do it manually. You can find the driver for the Arduino at [http://www.wch.cn/download/CH341SER\\_EXE.html](http://www.wch.cn/download/CH341SER_EXE.html). Download and install the driver. Everything should work now.

### Disable USB Power Saving Features

In Device Manager, click on the > to the right of the "Universal Serial Bus Controllers", then right click on the top "USB HUB" and then left click "Properties", then select the "Power Management" tab. Uncheck the checkbox for USB power saving. For any desktop, I would do this. If you are using a laptop and you depend on the battery a lot, I might not do it.