

## RTL-SDR Driver and Command Line Tools

### Install SoX command line tools

Command line tool for audio. These are not really a part of the SDR suite, but are necessary to play audio output from the SDR command line tools.

1. Download SoX from <http://sox.sourceforge.net/>. I downloaded the following zip archive: [sox-14.4.2-win32.zip](#).
2. Extract the contents of the archive to C:\opt. Create the C:\opt folder if necessary. This should create a C:\opt\sox-14.4.2 folder.

### Install osmocom SDR command line tools

1. Download tools archive: [RelWithDebInfo.zip](#)
2. Extract contents to C:\opt\sdr. Create the C:\opt\sdr folder if necessary. This should create a C:\opt\sdr\rtl-sdr-release folder.

### Install RTL-SDR Device and Device Driver

1. Download driver install tool: <http://zadig.akeo.ie/downloads/zadig.exe> to an C:\opt\sdr\zadig folder. Create the folder if necessary.
2. Plug in your RTL-SDR device into an available USB port. (Let the plug-and-play installation either complete or fail. The required driver will be installed in the next few steps.)
3. Run the zadig utility from File Explorer by double-clicking on it.
4. Select "List All Devices" from the Options menu.
5. Select the RTL2838UHIDIR (or similar device, it might also appear as the "Bulk-In, Interface (Interface 0)" device) from the drop-down menu of devices.
6. Click on the "Replace Driver" button. Wait for installation to complete and then close the zadig window. Note: It may be necessary to reinstall the driver if you move the RTL-SDR device to a different USB port.

### Test Installation

1. Open a Command Prompt window and navigate to the c:\opt\sdr\rtl-sdr-release\x64 folder (or x32 folder if you are running a 32 bit version of windows).
2. Enter the following command (all on one line):

```
rtl_fm -f 91.5e6 -M wbfm -s 200000 -r 48000 - |  
c:\opt\sox-14.4.2\sox -r 48000 -t s16 -L -c 1 - -t waveaudio
```

3. If you hear WUEV (at 91.5MHz), then everything is installed correctly. It may sound a little noisy, but don't worry about that at this point. You can replace the 91.5e6 with the frequency of other FM radio stations in your area.

### Install SDR#

1. Download the SDR Software Package (sdrsharp-x86.zip) from <http://airspy.com/download/>.
2. Extract the contents of the archive to the c:\opt\sdr\sdrsharp folder. You will need to create this folder.
3. Copy the file rtl\_sdr.dll from the c:\opt\sdr\rtl-sdr\x32 folder to the c:\opt\sdr\sdrsharp folder.
4. Double-click the SDRSharp icon in the c:\opt\sdr\sdrsharp folder.
5. Select "RTL-SDR (USB)" from the "Source" menu on the left. Click the play icon at the top and tune to WUEV (91.5 MHz). If everything is installed correctly, you should hear WUEV.

## Install GNURadio

1. Download GNURadio for 64-bit Windows: [GNURadio \(Windows 64-bit\)](#)
2. Run the installer.
3. After installation add the following line:

```
set GR_CONF_audio_audio_module=portaudio
```

to the **run\_gr.bat** file in the "c:\Program Files\GNURadio-3.7\bin" folder. This line should be added at the top of the file, just below the "echo setting gnuradio environment" line.