



Satellite Communications With Serenity

Lesson 1: Setting up a listening station on PC

In this lesson you will learn to use a PC to:

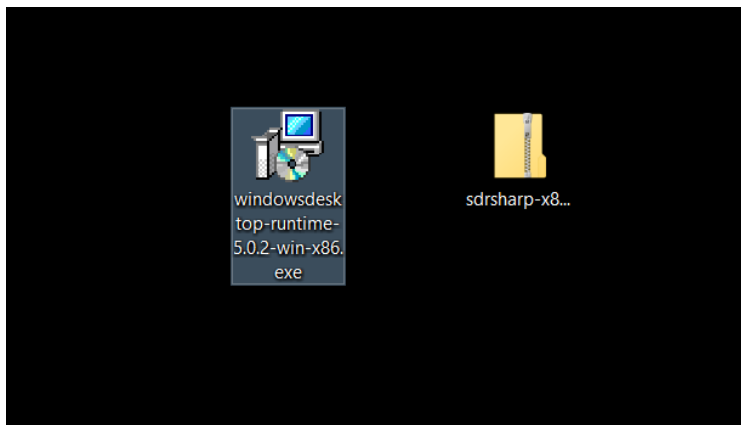
- Set up a basic satellite listening station.
- Use software to tune in to a local radio station as a model of how to acquire radio transmissions from orbiting satellites.

What you need

- Computer with Internet Access
- Software Defined Radio (SDR) dongle with Antenna
 - [NESDR](#)
 - [RTL-SDR](#)
 - [Antennas](#)

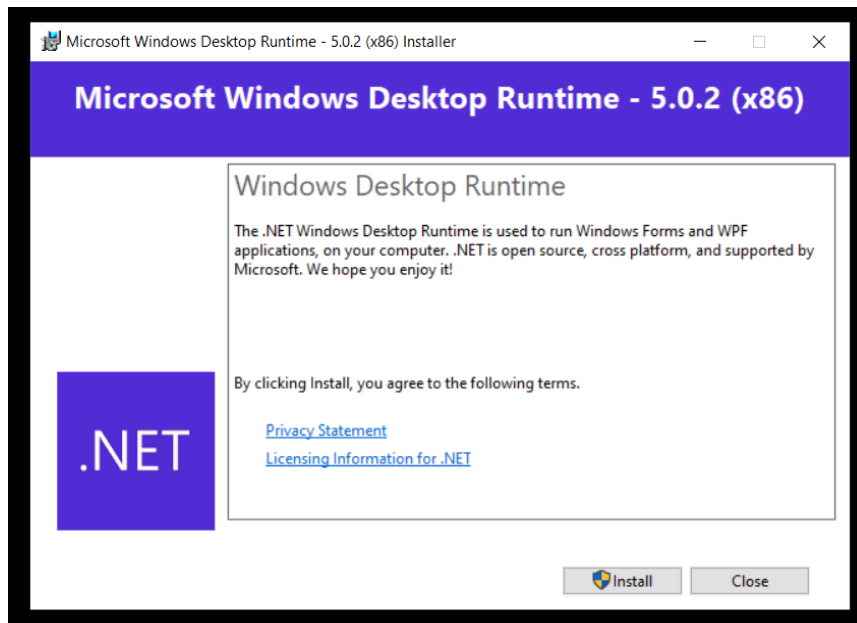
Step 1 – Download software

- Download [.Net Framework 5.0 Desktop Runtime](#).
- Download [SDRsharp](#) saving it to the Downloads folder on your computer.

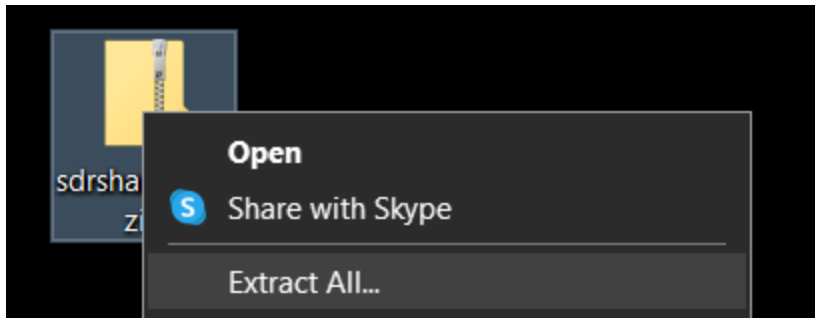


Step 2 – Installing Software

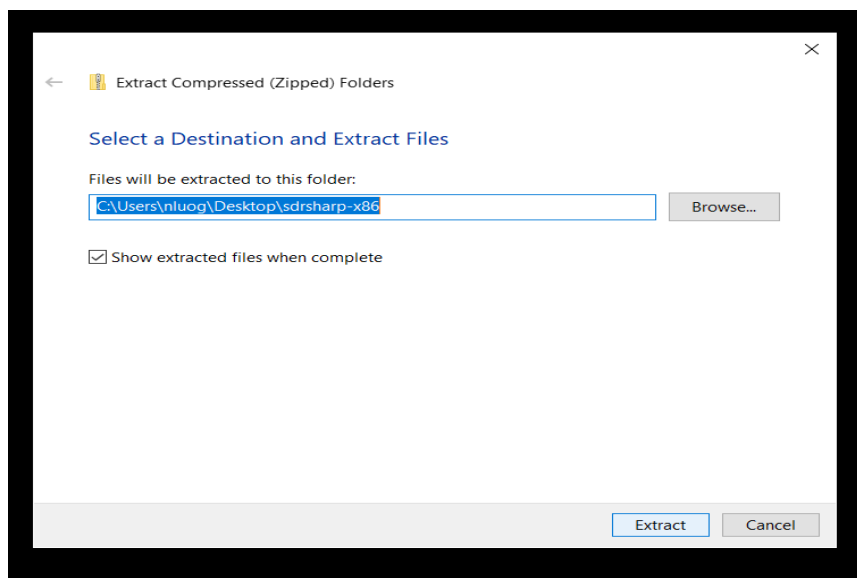
- Install .Net 5.0 Desktop Runtime.



- After .Net Framework 5.0 is installed, right click on the sdrsharp-x86.zip and click Extract All.

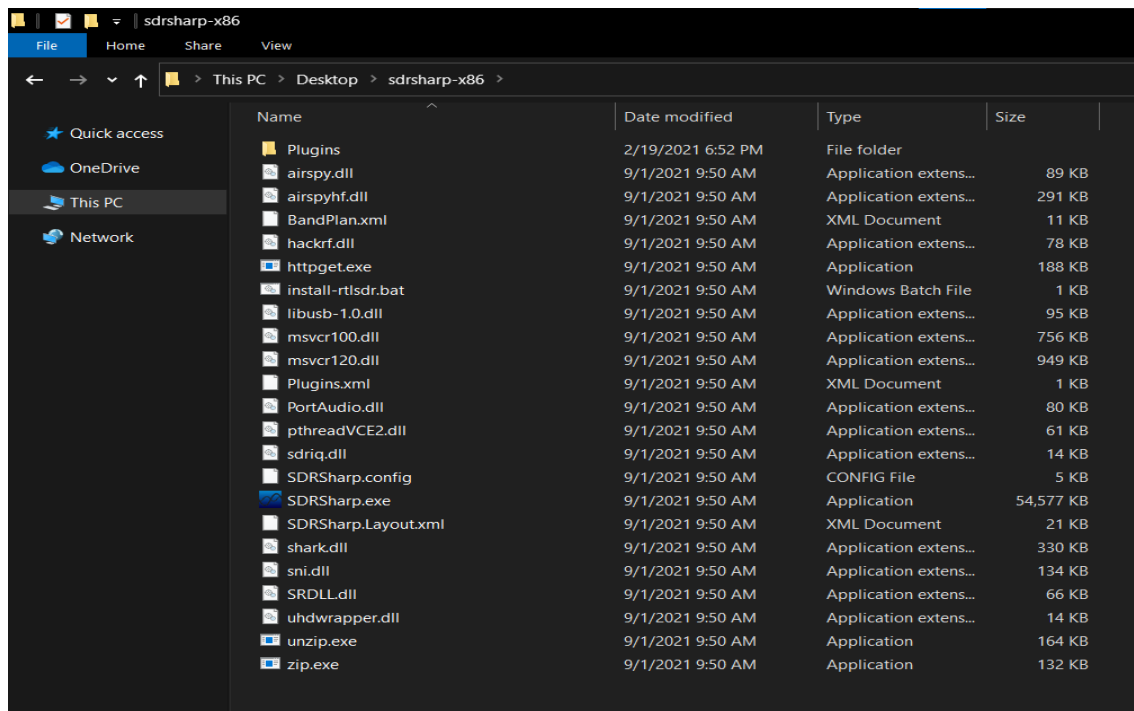


- Click Extract.

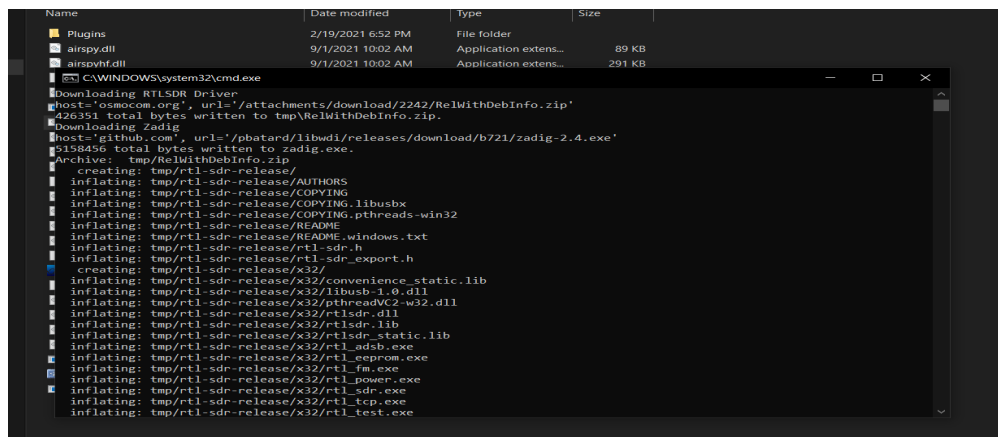


Step 3 – Setting up the SDR Dongle and SDRsharp

- Attach the antenna to the SDR dongle. (For best reception place the antenna outdoors)
- Plug the SDR dongle into an open USB port on your computer.
- Open the sdrsharp-x86 folder that you extracted in Step 2.



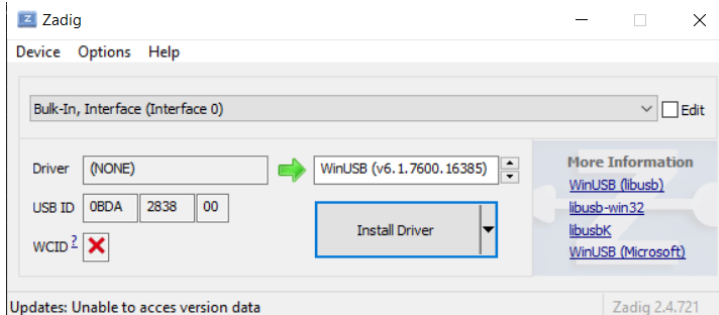
- Double click instll-rtl-sdr.bat



- Wait for the downloading to finish then Press any key to continue...
- Double click Zadig.exe

| | | | |
|----------------|-------------------|-----------------------|----------|
| uhdwrapper.dll | 9/1/2021 10:02 AM | Application extens... | 14 KB |
| unzip.exe | 9/1/2021 10:02 AM | Application | 164 KB |
| zadig.exe | 9/1/2021 10:05 AM | Application | 5,038 KB |
| zip.exe | 9/1/2021 10:02 AM | Application | 132 KB |

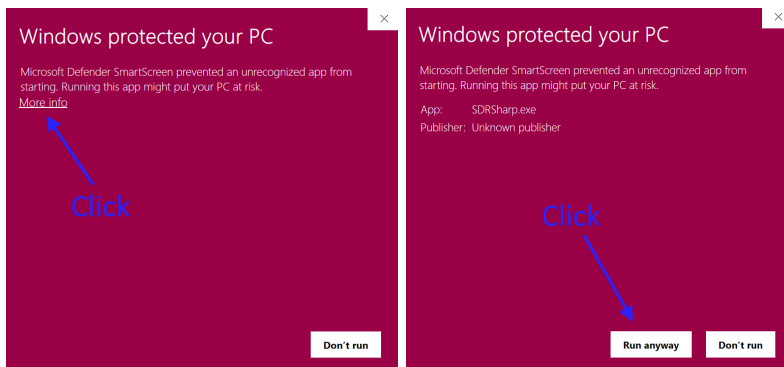
- Before the next step it is recommended that you unplug all other USB devices.
- In the dropdown menu choose your SDR or Bulk-In, Interface. **(DO NOT CHOOSE OTHER OPTIONS!)**



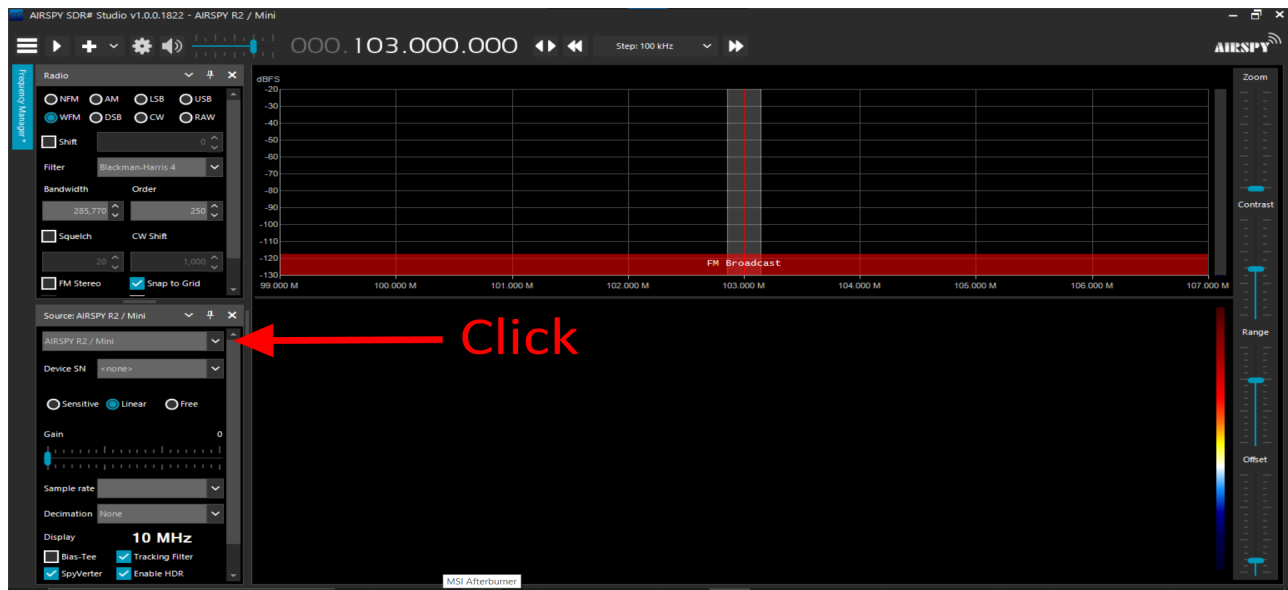
- Click Install Driver (this can take some time).
- Once complete, close Zadig.
- Double click SDRSharp.exe.

| | | | |
|---------------------|-------------------|--------------|-----------|
| SDRSharp.config | 9/1/2021 10:23 AM | CONFIG File | 8 KB |
| SDRSharp.exe | 9/1/2021 10:02 AM | Application | 54,577 KB |
| SDRSharp.Layout.xml | 9/1/2021 10:23 AM | XML Document | 18 KB |

- If you get a Microsoft Defender warning, click more info, then run anyway.

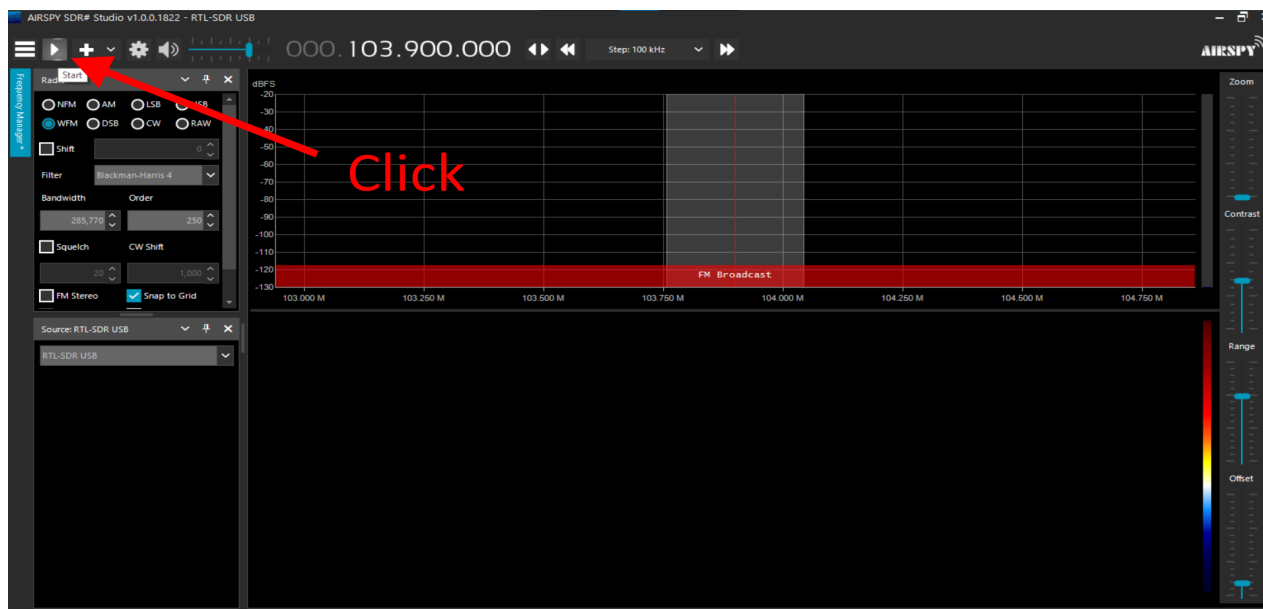


- In the lower left panel, click the first dropdown menu and choose RTL-SDR USB.

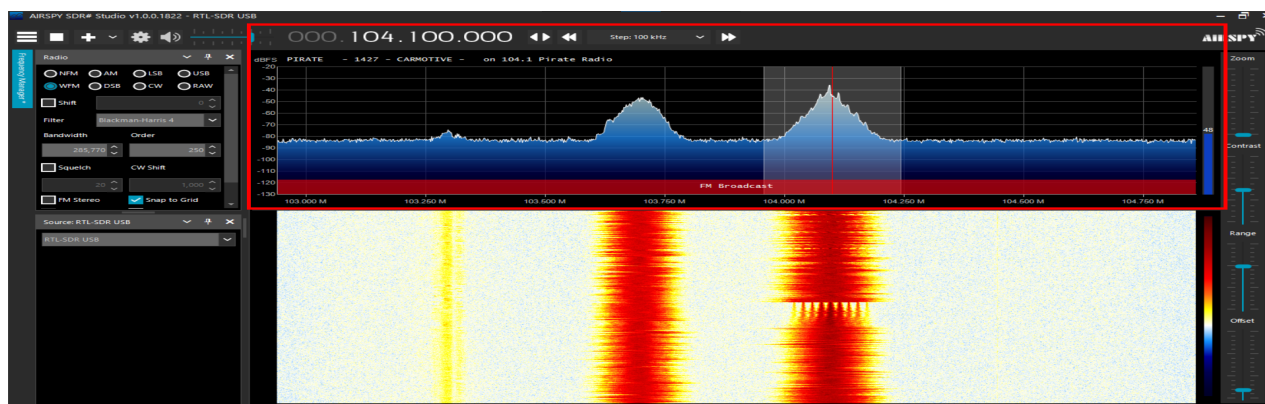


Step 4 – Using SDRsharp to tune into a local radio station

- In the upper left corner click the start button.



- The RF Spectrum panel in the middle should now show radio signals that you can tune to.



- You can use multiple methods to tune to different stations. You can use the mouse to click around and drag on the RF Spectrum panel as well as click the numbers or arrows at the top.

Note:

You can improve reception of a station by adjusting the bandwidth that you are listening to. In order to do this click on one of the lines on either side of the station and drag to encompass the entire station.

