

How to setup P25 Scanner using 2 x RTL SDR and SDR-Trunk Software

Things you need to buy.

Hardware

- \$29.95 X 2 – [RTL-SDR Blog V3 R820T2 RTL2832U 1PPM TCXO SMA Software Defined Radio](#)
- \$22.95 X 1 - [RaTLSnake M6 v2 - Premium 3-Antenna Bundle for RTL-SDR Software Defined Radios](#)
- \$7.49 X 1 - [SMA Female to Dual SMA Male Splitter Cable](#) Recommended if you buy 2 SDRs)

Software / Subscriptions

- \$30.00 - Radio Reference (Premium) Subscription - <https://www.radioreference.com/premium/>

There are a couple websites helpful for setup. However please note we only focus on a couple steps of each site. None of the sites below have all the steps so that is why I'm compiling the steps here for you.

<https://www.rtl-sdr.com/rtl-sdr-quick-start-guide/>

<https://airspy.com>

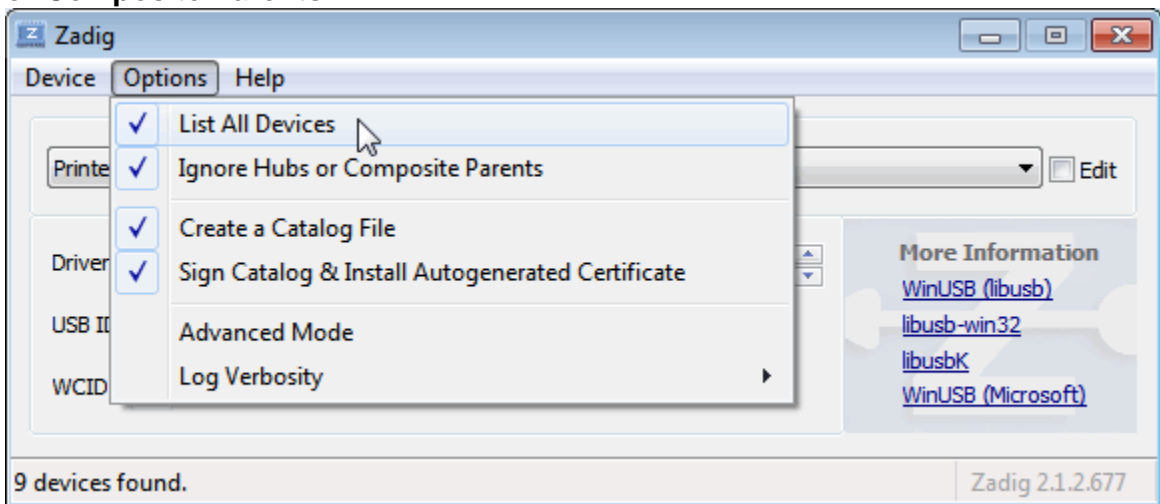
<https://github.com/DSheirer/sdrtrunk/releases>

<https://github.com/DSheirer/sdrtrunk/wiki/User-Manual#sdrtrunk-user-manual>

<https://www.radioreference.com/premium/>

Install and Setup Instructions

1. Make a new folder on your desktop called SDR-Scanner
2. Download zadig
 - a. Got to <https://zadig.akeo.ie> and download the Zadig software
Save the file direction into the root of Desktop\SDR-Scanner\
3. Install driver for SDR.
 - a. Connect your 1st USB RTL-SDR devices to your computer.
 - b. Open the Zadig.exe file from Desktop\SDR-Scanner folder
 - c. In Zadig, go to "**Options->List All Devices**" and make sure this option is checked. If you are using Windows 10 or 11, in some cases you may need to also **uncheck "Ignore Hubs or Composite Parents or Composite Parents"**

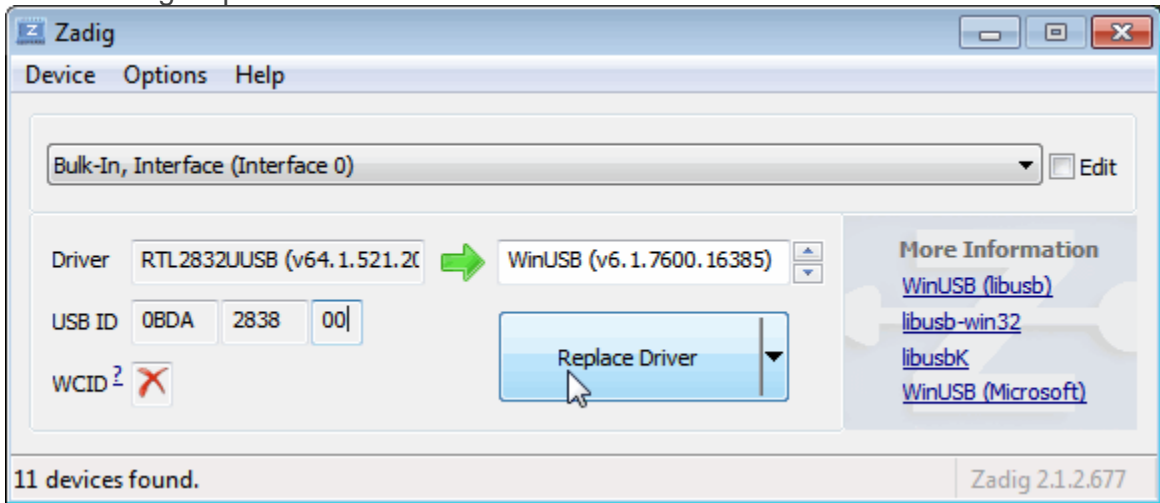


- d. Select "**Bulk-In, Interface (Interface 0)**" from the drop down list. Make sure it is Interface 0 (ZERO), and not "1". Note on some PCs you may see something like **RTL2832UHIDIR** or **RTL2832U** instead of the bulk in interface. This is also a valid selection. Double check that USB ID shows "0BDA 2838 00" as this indicates that the dongle is selected.

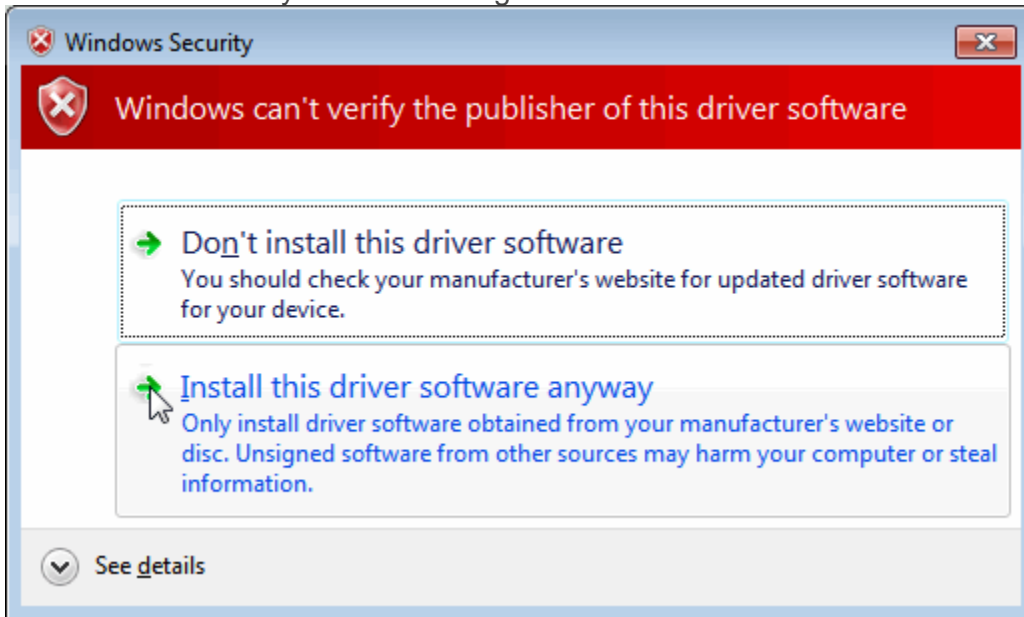
WARNING: Be sure you select the correct item or you will overwrite that device's driver! DO NOT click around randomly in Zadig. If you do you are likely to overwrite your mouse, keyboard, printer, soundcard etc drivers. Many bad reviews we get are due to people clicking around randomly in Zadig, so PLEASE check what you are doing first.

- e. We need to install the WinUSB driver, so also **ensure that WinUSB is selected** in the box after the arrow next to where it says Driver (this is the default selection). The box to the left of the green arrow is not important, and it may show (NONE) or (RTL...). This left hand box indicates the currently installed driver, and the box to the right the driver that will be installed

after clicking Replace/Install Driver.



- f. **Click Replace Driver.** On some PC's you might get a warning that the publisher cannot be verified, but just accept it by clicking on "Install this driver software anyway". This will install the drivers necessary to run the dongle as a software defined radio.



4. Repeat step 3 for the second USB RTL SDR device.

5. If using multiple SDRs need to download the RTL-SDR-BLOG driver, change serial number on both SDRs before proceeding.
 - a. <https://github.com/rtlsdrblog/rtl-sdr-blog>
 - b. Click on the Releases area on the right
 - c. Download the latest release.zip -
<https://github.com/rtlsdrblog/rtl-sdr-blog/releases/download/1.0/Release.zip>
 - d. Unzip file to Desktop\SDR-Scanner\RTL-SDR-Release
 - e. Open Command Prompt as Admin (right click start menu and go up to open command prompt (Admin))
 - f. Type **cd C:\users\%userprofile%\desktop\SDR-Scanner\RTL-SDR-Release**
 - g. Type **rtl_eeprom** and press enter
 - h. Verify that there are 2 SDRs listed, should be a device 0 and a device 1
 - i. Type **rtl_eeprom -d 0 -s 00000101** press enter
 - i. When prompted press Y
 - j. Type **rtl_eeprom -d 1 -s 00000202** press enter
 - i. When prompted press Y
 - k. Close command prompt

6. Download and Setup SDR Trunk
 - a. Go to <https://github.com/DSheirer/sdrtrunk/releases> and locate the latest released version, then locate the Assets dropdown area and the download files will be there.

 - b. Extract contents of the SDRTrunk zip file to Desktop\SDR-Scanner\SDR-Trunk\

 - c. Browse and start the app at Desktop\SDR-Scanner\SDR-Trunk\bin\sdr-trunk.bat

 - d. Configure User Preferences
 - i. Setup Directories
 - ii. Setup Decoder by going to Decoder, click JMBE Audio Library, click Create Library, if prompted click Create Folder and let it download what it needs.

 - e. Configure Playlist (Channels, record settings, priority, etc.)
 - i. Login with your Radio Reference account.
 - A. If you don't have one I recommend you get one.
 - ii. Search for your city / county
 - iii. Select which system you want to monitor and add them to an alias list (list of channels to monitor which is prepopulated with data from Radio Reference based upon your selection).

Lessons Learned

- If you choose to use two sdrs, not necessary but if you do, you will need to change the serial number on both SDRs.
- Adjust initial PPM somewhere between -3.9 to -4.3