Updated Information #2
Cheap and Easy SDR and SDR#

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Based on feedback received, I've compiled a few more notes and tips for getting the most out of your "Cheap and Easy SDR".

- Frequency Manager and Scanner plug-ins

Two frequency manager/scanner plug-ins are now available for SDR#. These should be considered beta (i.e. could have bugs) – contact the developer for questions:

1. Version 1.1 of Frequency Manager + Scanner by Jeff Knapp N8GJL is now available for download from www.sdrsharp.com/downloads/plugins/freqmgr.zip
   This plug-in provides extensive frequency database management tools and scanning options, plus logging and scanner data metrics. It now comes with an automatic installer to simplify configuration.
2. A simple Scanner Plug-in is available for download from:
   http://uk.groups.yahoo.com/group/SDRSharp/files/ScannerPlugin/

- SDR# WAV Recorder plug-in
  A built-in WAV file recorder is now part of the SDR# download.   The recorder is capable of operating in two modes, with various parameters:
  1. The audio presently going to the speakers may be recorded as a WAV file
  2. The entire spectrum as sent from the RF Front-end may be recorded.

  While it is very nice to be able to save audio files, the ability to store the entire spectrum is a feature that really highlights the power of the DVB-T dongle and SDR.   Since the dongle provides up to 2 million samples per second, this allows SDR# to save a 2 Mhz slice of the spectrum for later replay and "tuning". (Obviously files become VERY large very quickly, so use your own judgment when selecting recording parameters.   For example, 30 seconds worth of 8 bit samples creates files approx. 3 mb in size.   Files are automatically saved in the SDR# directory when the Record function is stopped.

- Step-by-step procedure for using the Auto Install script for SDR#

Hopefully this will help those who are having difficulty installing the WinUSB driver with Zadig. (As reported in a previous update, the developer of Zadig has created a new version due to

changes in Windows 8).   Version 139 that is downloaded with the install script below will still work for Windows XP and Win 7 and is recommended for those operating systems.

I suggest printing the following out so you can take it one step at a time. Hopefully this step-by-step approach will be of assistance, as sometimes more experienced computer users overlook details that can be puzzling for first-timers.

 I've written this procedure by going through the installation process myself, so I think it is correct. But there are always slight differences in how different versions of Windows and various anti-malware programs may interact.   In general, if you get warnings from your anti-virus security software, it is safe to ignore them, because as long as you download from the SDR# download page, the files are trustworthy.   But as always, software installation is done at your own risk, with "no guarantees".   The following has been verified for Windows XP and Windows 7. (Windows 8 users – see note at the end of this document).

1.   Click this link to download the automatic installation script:
http://sdrsharp.com/downloads/sdr-install.zip

2. Tell it to "Open With" whatever program is on your PC that you normally use to unzip Zip files (usually WinZip or equivalent).

3. If it asks for a location to install it in, just type in something simple like "c:/sdr"

4. Open "My Computer" and select the C drive.   Double-click on the "sdr" directory you just created, and you will see a folder called "sdr-install".   Double click on it.   You should now see three files: httpget, install, and unzip   Double click on "install".

5. You should see a black DOS "command window" open up and a bunch of files being downloaded and "inflated".   Wait until it's done and this window will automatically close. (Because this file is automatically loading programs onto your computer, it is likely to trigger a warning from PC security software. Because it comes from a trusted location, it is OK to ignore these warnings).

6. The window you previously opened (C:/sdr/sdr-install) should now look a little different - there should now be a new folder in it called "sdrsharp".   Double click this folder to open it up.

7. Be sure your DVB-T dongle is plugged into your PC for the next step. The usual Windows "New Hardware Found" dialog will be displayed at this time. Allow Windows to go ahead and complete the installation of drivers and when finished, you should get the usual message saying that your new hardware is ready for use. (Even if Windows can't find the right drivers, you should be OK, the important thing is to allow Windows to finish, as interrupting this process makes it more difficult to replace the drivers later).   These drivers are incorrect -- the SDR# program cannot use the drivers installed by Windows because Windows thinks you want to watch DVB-T digital TV instead of using the dongle as an SDR.   To change that, we need to replace the TV driver with the correct one (WinUSB) in the next step using a utility called Zadig.

8. At the very bottom of the folder list you will see "zadig". Double click to run the program. Then, follow these steps:
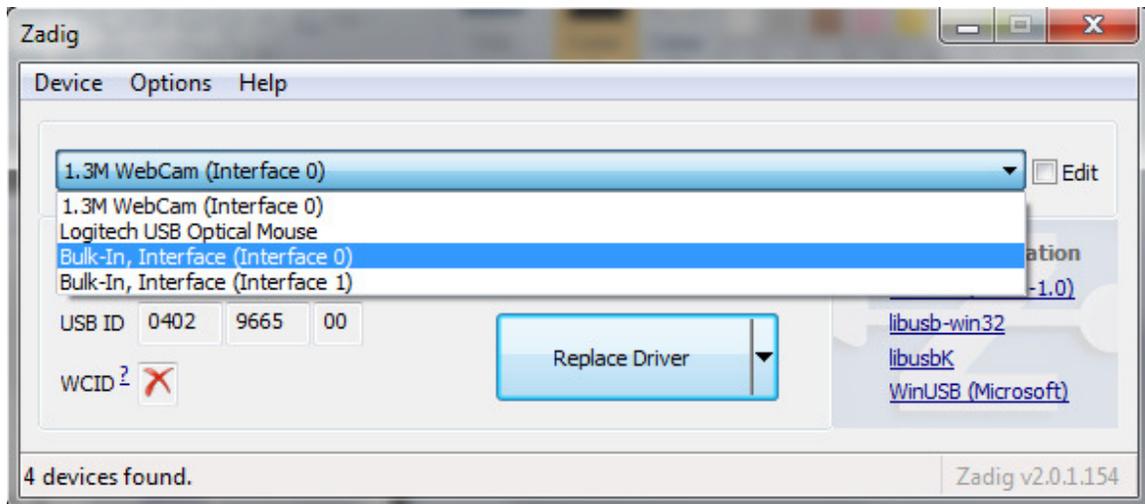
- After you run Zadig you should see the following screen:
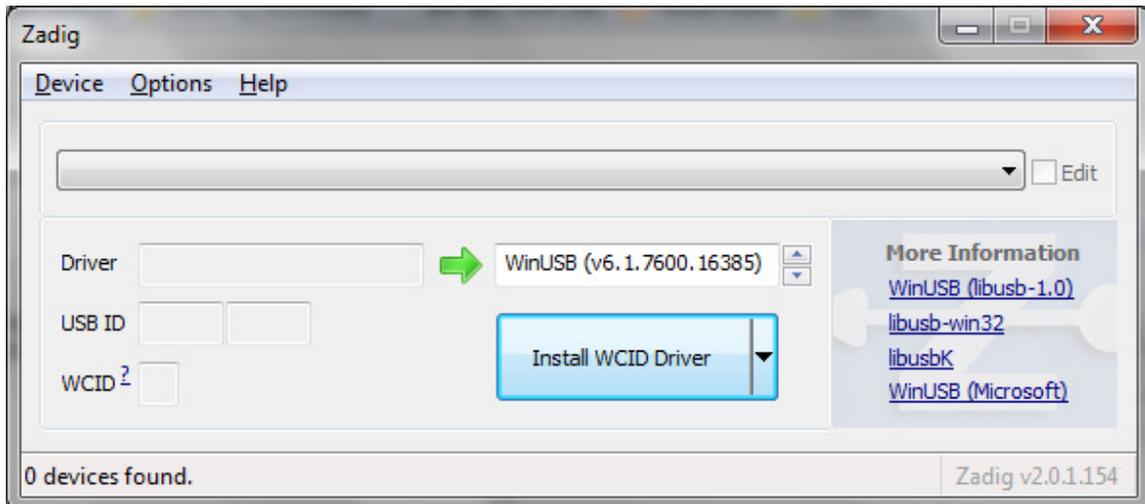
- Click on Options and select "List All Devices":
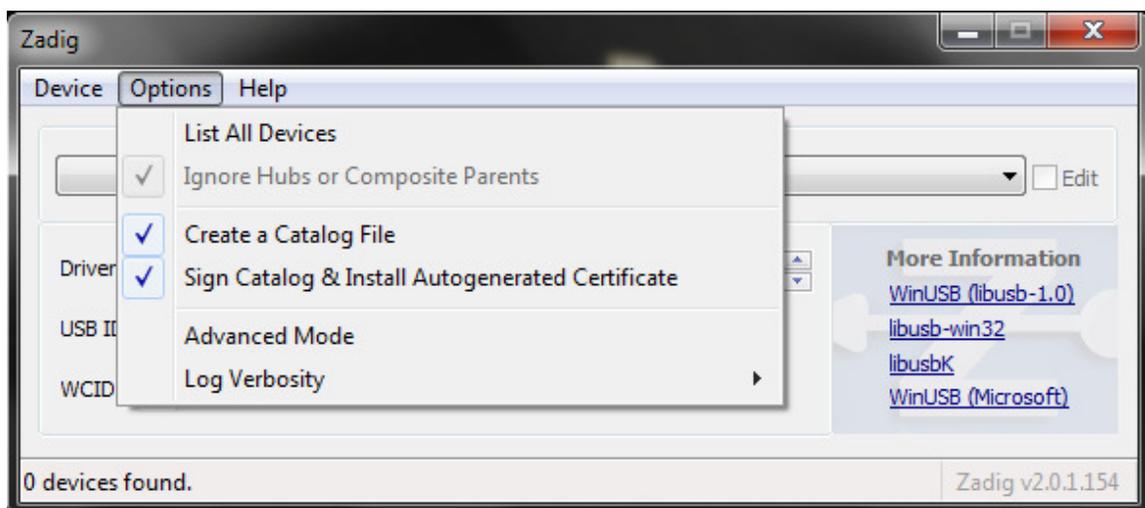
- Examine the devices that are displayed. Choose the one that says "Bulk-In, Interface (Interface 0) or "RTL2832U".   This is your dongle:

The list above is just an example from one PC, but you should be able to find the RTL2832U or Bulk-In Interface 0 on the list, and that's the one you want. (Be careful not to select the wrong device to avoid incorrectly replacing the driver for some other USB device on your PC).

- In the box to the right of the green arrow make sure "WinUSB" is chosen - not libusb or libusbk. The big button underneath will say "Replace Driver" or "Reinstall Driver".
- Click the big button.
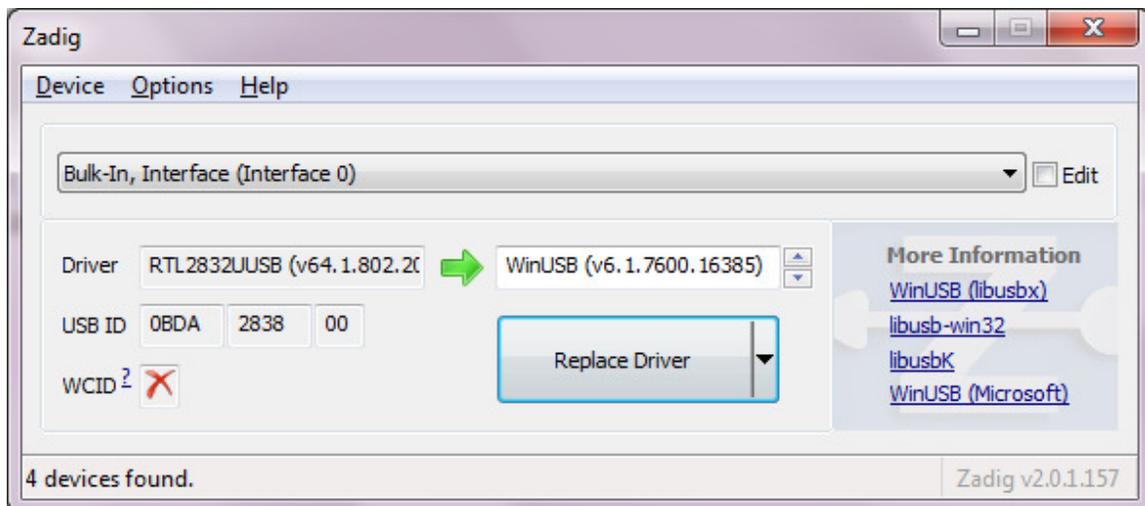
Hopefully you will get a "Success" message.   If you get any security warnings - allow Windows or your anti-virus program to go ahead and install the driver anyway (this is just the operating system trying to guard against malware). Since the driver you are installing has not been

through the official Microsoft certification process, it is considered an "unsigned driver" by Windows, but since you know what you are doing, go ahead and tell it to "Install the Driver anyway".

Normally, this will be the only time you have to use Zadig, unless you insert the dongle into a different USB port or obtain another dongle. The driver is linked to a specific dongle and a specific USB port, so if you use a different dongle or want to run a demonstration on a friend's PC for example, you will have to repeat the above procedure in order to add the WinUSB driver.

Close Zadig after you get the "Success" message.

9. Go back to the list of programs (C:/sdr) and find the one called "SDRSharp". NOT SDRsharp.exe (which is your configuration file), but the only file that has little icon of a kitchen mixer next to it. Double click this file to launch SDR#. (After all, radio receiver is just a big mixer, right?)

10. In the upper left-hand part of the screen there is a pull-down menu next to the "Play" button. Click it and a list of options will appear. Click on the one labeled "RTL-SDR / USB".

You should now have a screen that looks similar to this (details will be different, but you should have the same type of pop-up box with RTL-SDR Controller at the top)
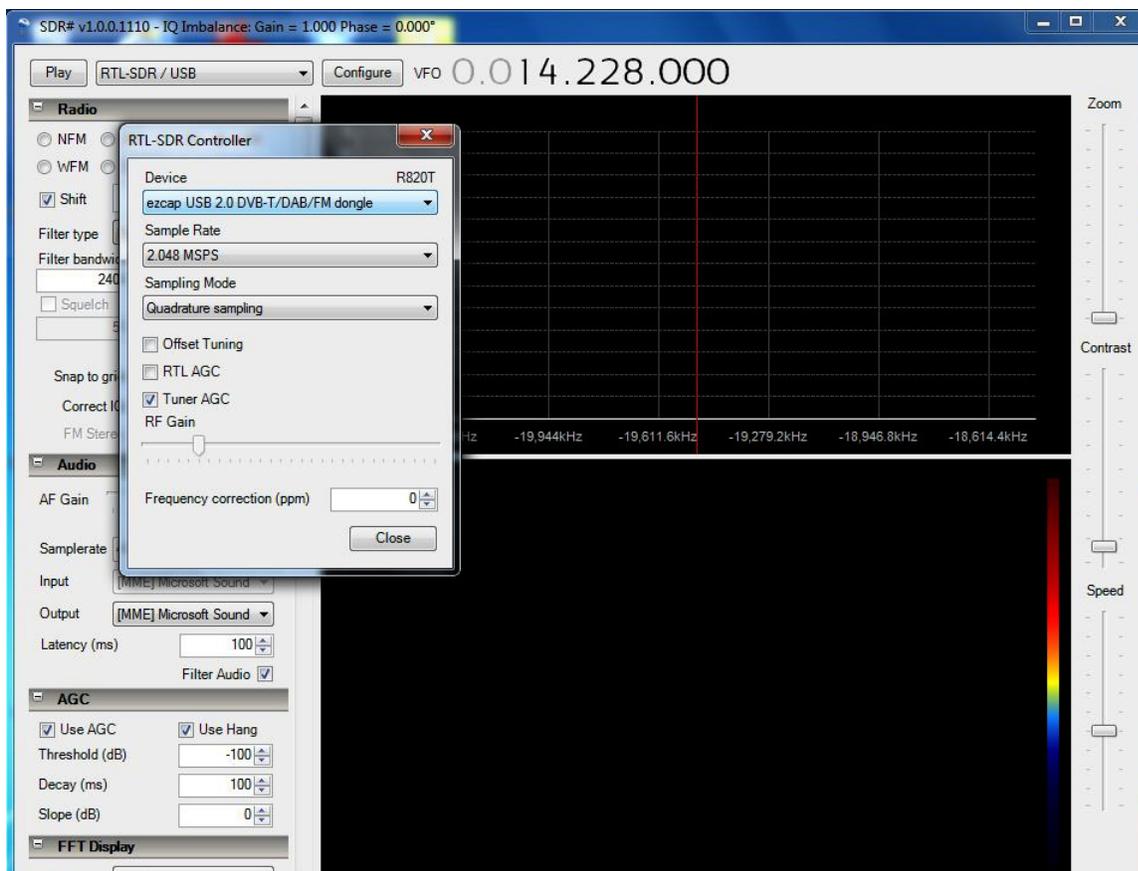
Don't change any of the other settings but just note that this is where you go to turn on/off the AGC and to change the RF Gain if you have AGC turned off.   It is necessary at times to turn off AGC and adjust the RF gain manually to avoid overloading, but most of the time you can leave AGC "ON" to get highest sensitivity).   Click "Close".

10.   You can now click on "Play" and begin using your SDR! There is no substitute for just "playing around" but a nice guide to SDR# features can be downloaded from:

http://www.atouk.com/wordpress/?p=153

I hope this simplified procedure helps get SDR# configured and up and running on your PC. If not, let me suggest that you print it out and find a local person who is computer savvy who can come to your PC and go through it step by step with you.   There are always glitches and things that are different from one PC to another which makes it impossible to know what is going on unless you are sitting right at the keyboard.   It is difficult to troubleshoot problems via email, but the best resource for help and advice is the Yahoo SDR# group:

http://uk.groups.yahoo.com/group/SDRSharp/

QST Readers: The big difference since my article "Cheap and Easy SDR" was published is that the automated installation I describe here is the only way that is recommended.   So if you tried the manual steps outlined in the article, just delete the folder you were working in and start fresh. Since SDR# doesn't change the Windows Registry, there is no need to run an uninstaller or use Add/Delete Programs - just delete the folder and it's gone.   Give the above procedure a try and I think you will be successful.

Good luck with SDR and 73,

Bob W9RAN

PS:

Most difficulties with Zadig are related to having insufficient privileges (must be "Administrator"), or when Windows and/or 3rd party malware protection software attempts to block the installation of "unsigned drivers". The following site provides specific information about Unsigned Drivers that may be helpful:

http://sdrsharp.pbworks.com/w/page/62635046/Unsigned%20drivers

The approach that seems to work best is to allow Windows to complete the plug-and-play installation of (incorrect) drivers, and after it has done so, run Zadig to install the correct (WinUSB) driver required for SDR#.

Windows 8 users: There are known issues with Zadig due to changes made by Microsoft as described here by the author of Zadig: http://sourceforge.net/projects/libwdi/files/zadig/

For assistance with Windows 8 issues, the SDR# Yahoo group is the best resource for assistance: http://uk.groups.yahoo.com/group/SDRSharp/