Welcome to the revised edition of the HDSDR-SDRPlay RSP setup guide. This guide will help you completely setup the RSP and get you up and running in HDSDR as fast and as possible.

I will also explain some of the key features of HDSDR along the way. My instructions are not set in stone. This is the way that I have my RSP setup in HDSDR. If you run into any issues you can reach me at the above email address.

HDSDR SETTINGS THAT I WILL COVER ARE THE FOLLOWING:

Soundcard settings
Volume settings
Bandwidth settings
Filter adjustments
Center spike removal
PPM correction
Tuning options
Adding frequencies
Plus a whole lot more

What is the SDRPlay RSP:
The RSP is a USB powered 12bit full coverage SDR that can process a maximum of 8mhz of bandwidth on the waterfall. Basically its the best SDR you can buy for about $160.00. Keep in mind. A SDR radio is only as good as it's antenna. If you

are a first timer to SDR'S then I would suggest you join us on the SDRPlay Facebook group so we can further help you with any questions & concerns you might have prior to your purchase. The Facebook group covers everything RSP related.

To get the RSP up and running with HDSDR is a simple 4 step process.

1: Update your computer via Windows Update
2: Download and install the API
3: Download and install HDSDR
4: Download and install the EXT/IO

The very first thing you want to do before you unpack the RSP is run windows update and make sure all "Critical" updates have been downloaded and installed. If your machine has pending updates to install then please do it before making any physical connection with the RSP. Now that all the updates are downloaded and applied it is extremely important that you reboot your machine. Now that we got that out of the way let's download the latest API & EXT/IO & HDSDR.

The API is the software that allows the RSP to make a communication connection to your computer. Without the API the SDR software would have no way of controlling the RSP'S low level functions. The latest API at the time of this writing is v1.5.0 and is dated August 2015. Download the API from sdrplay.com, Select platforms and then windows.

✳ Windows   Windows related information

🏠 / platforms / windows
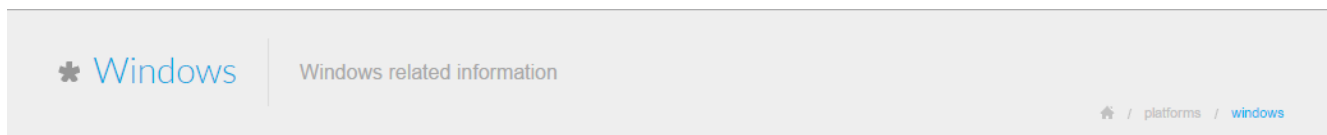
New customers should use the "Start Here" guide for software installations.

Generic Documentation

RSP Single Page Datasheet (English) 🇬🇧
RSP Single Page Datasheet (French) 🇫🇷
Detailed Technical Specification
API Specification
AGC Technical Note
RSP Conceptual Block Diagram
RSP Schematics

ℹ Current API Installer: 1.5.0
(Release date: 23rd August 2015)

Current EXTIO Plugin: 3.3
(Release date: 11th November 2015)

Current SDR# Plugin: 2.2
(Release date: 12th October 2015)

Windows Specific Documentation

Getting Started with the RSP and HDSDR (English) 🇬🇧
Getting Started with the RSP and HDSDR (French) 🇫🇷

API/Drivers

Windows API & Hardware Driver Installer (V1.5.0 released 23/Aug/2015) - Release Notes

On the right side of the page you want to select the following drivers to download to your system. *Current EXTIO* and then *Current API Installer*

After clicking the link for *Current API Installer* you will have to enter an email address as show below.
Click continue and you will be shown one last page before the download is ready

SDRplay

✱ Serial Check | Download the API/Driver

🏠 / serial check

Please enter a few details to download the API/Driver

Registered users just need their email address. Note: we've moved to a new system so apologies if existing users need to re-register their details.

Email: [   ] [Continue]

✱ Serial Check | Download the API/Driver

🏠 / serial check

Please enter a few details to download the API/Driver

Registered users just need their email address. Note: we've moved to a new system so apologies if existing users need to re-register their details.

Email:	mikexeno@aol.com
Name:	[ ]
Country:	Please Select ▼
Purchased:	Please Select ▼
Serial Number:	RSP#180915#7# ▼ [ ] (select your serial prefix and complete the number)

☐ Check here if you are awaiting your RSP and don't yet have a serial number.

You have the option to fill out the form completely or just enter a name and email address and select (Check here if you are awaiting your RSP) If you prefer to fill out the form completely then do so and hit the Continue button. The API should now start downloading. After the download is completed you will have a file in

your downloads folder called MiricsSDRAPIInstaller_1.5.0.exe & SDRplay_EXTIO_Installer_3.4.exe

You can now connected the RSP to your machine via the USB cable.

Let's finish up with the API installer. Some people would say to double click the file to install it but I would suggest you right click it and select Run as administrator. After the API installer is complete you should not run windows update again and apply any critical updates the updater finds. If nothing is found then reboot the machine. If critical updates are available then download them and reboot the machine.

This might seem like a P.I.T.A. but this is the best way and the way I setup new users on the Facebook group and have had zero issues or complaints with my style of installation and configuration. Taking the long steps now helps to prevent any possible headaches down the line. Now that the API is installed and the RSP is connected lets Download the EXT/IO.

The EXT/IO allows the software (HDSDR) to process the baseband IQ input coming from the RSP.

Download HDSDR. Go to www.hdsdr.de and scroll down to the bottom of the home page and select download.

After the download it complete you will need to locate the HDSDR installer in your download directory which is usually (C:\Users*YOUR USER NAME*\Downloads).

After locating the installer your want to right click (not the default left click) on the HDSDR_installer.exe and select Run as administrator. After the setup is complete you can now install the EXTIO from SDRPlay.

To install the EXT/IO Driver. Double click on the file SDRplay_EXTIO_Installer_v3.4 it will then as you for the location of HDSDR. Hit browse and tell the installer to look in the following default locations.
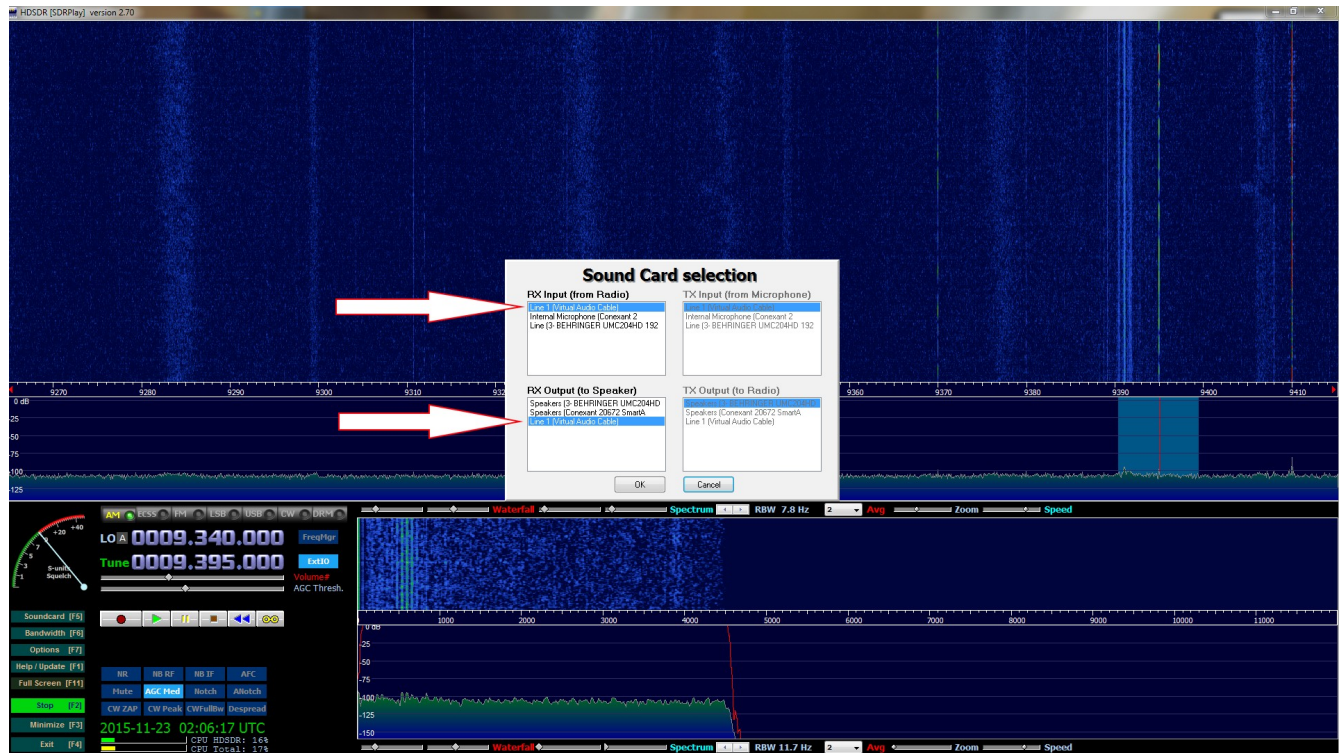
Windows 32bit
C:\Program Files\HDSDR
Windows 64bit
C:\Program Files (x86)\HDSDR

After all three main steps have been completed (API, HDSDR & EXTIO) I would recommend rebooting the machine one last time. After this reboot completes

then we are ready to start listening to signals. You can now launch HDSDR. We will now setup HDSDR to run perfectly with the RSP. Each step will be on a single page.
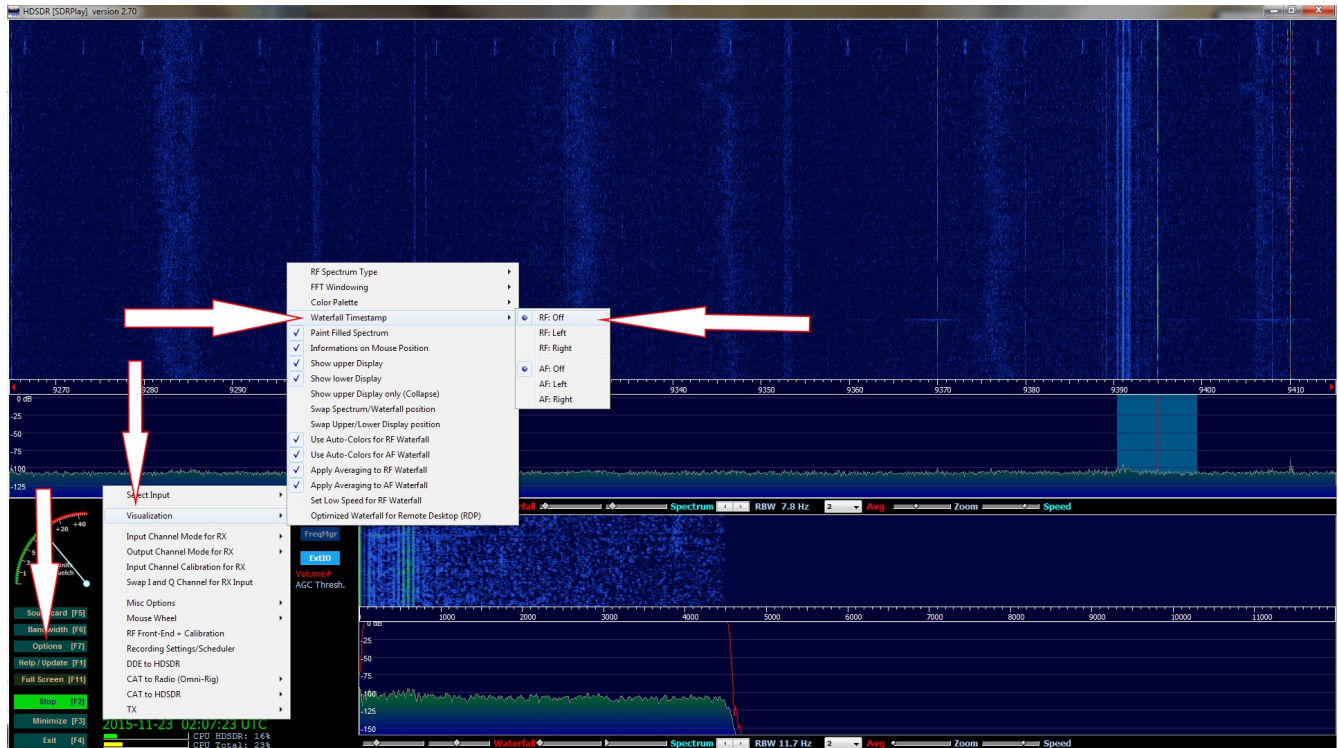
STEP-1

Set your RX input and RX output to match your computer's audio settings.

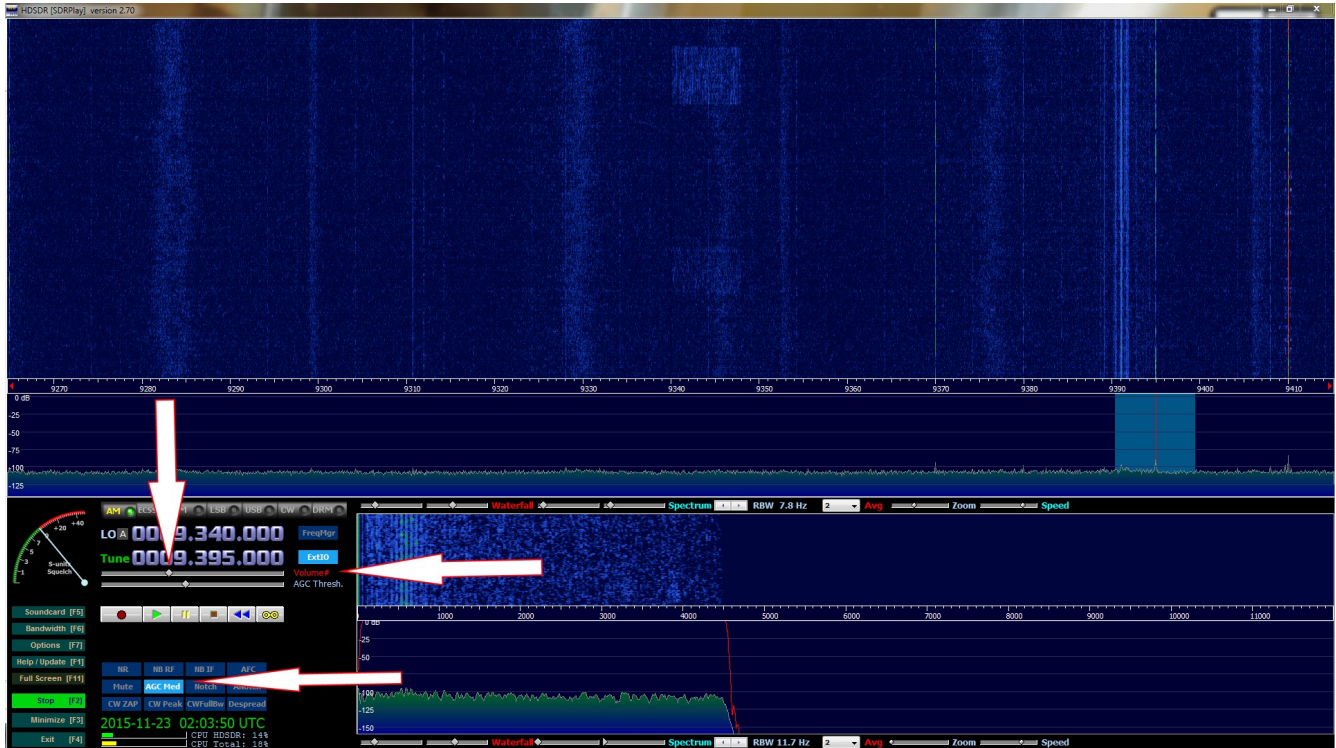This setting tells HDSDR how to use your audio input's and output's

STEP-2

Remove the waterfall time stamp:

1: Options

2: Visualization

3: Waterfall Time stamp

4: Select RF:Off

This setting tells HDSDR that you want it to show a time stamp in the main waterfall.

STEP-3

Set the main volume output and AGC:

1: Move the volume slider to almost the mid way point

2: Right click on Volume to lock it in place (turns red)

3: Hit the AGC button until it reads ACG Med.

This setting tells HDSDR how you want to process the automatic gain for audio in the bandpass. I prefer Medium for most shortwave listening.
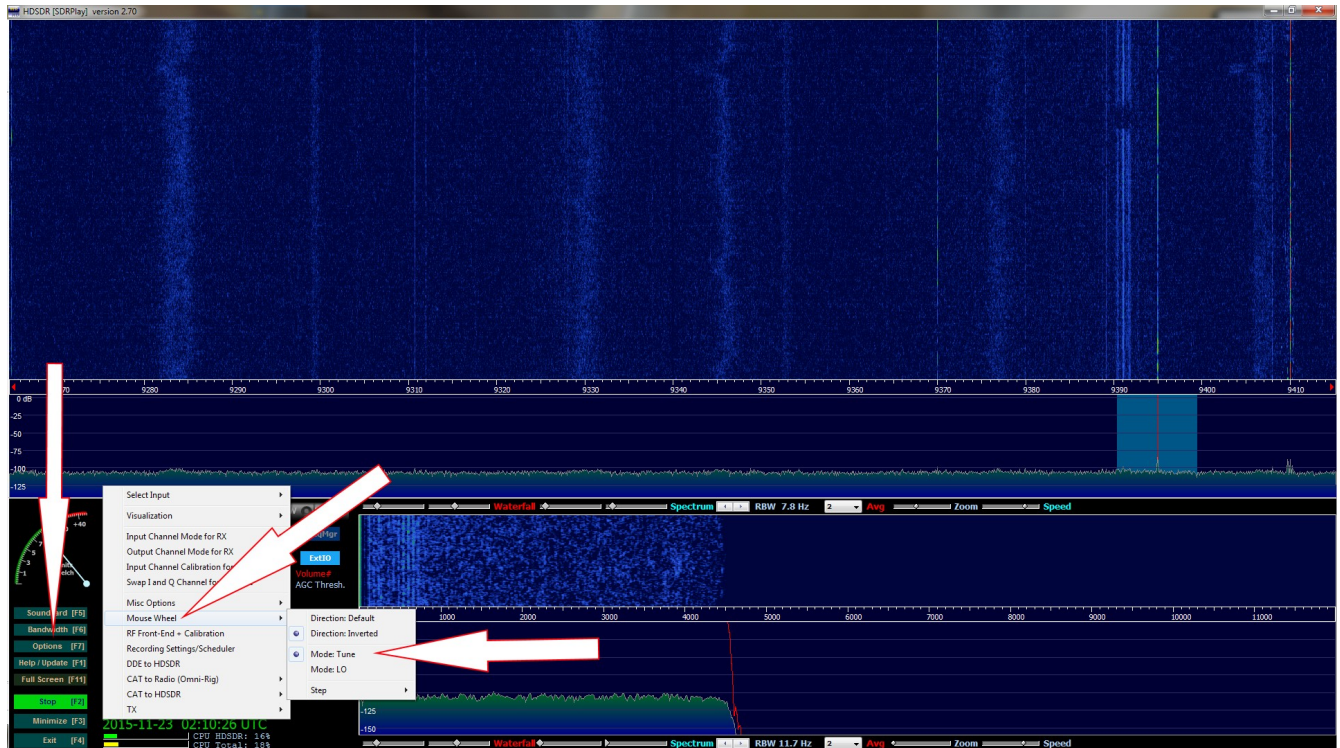
STEP-4
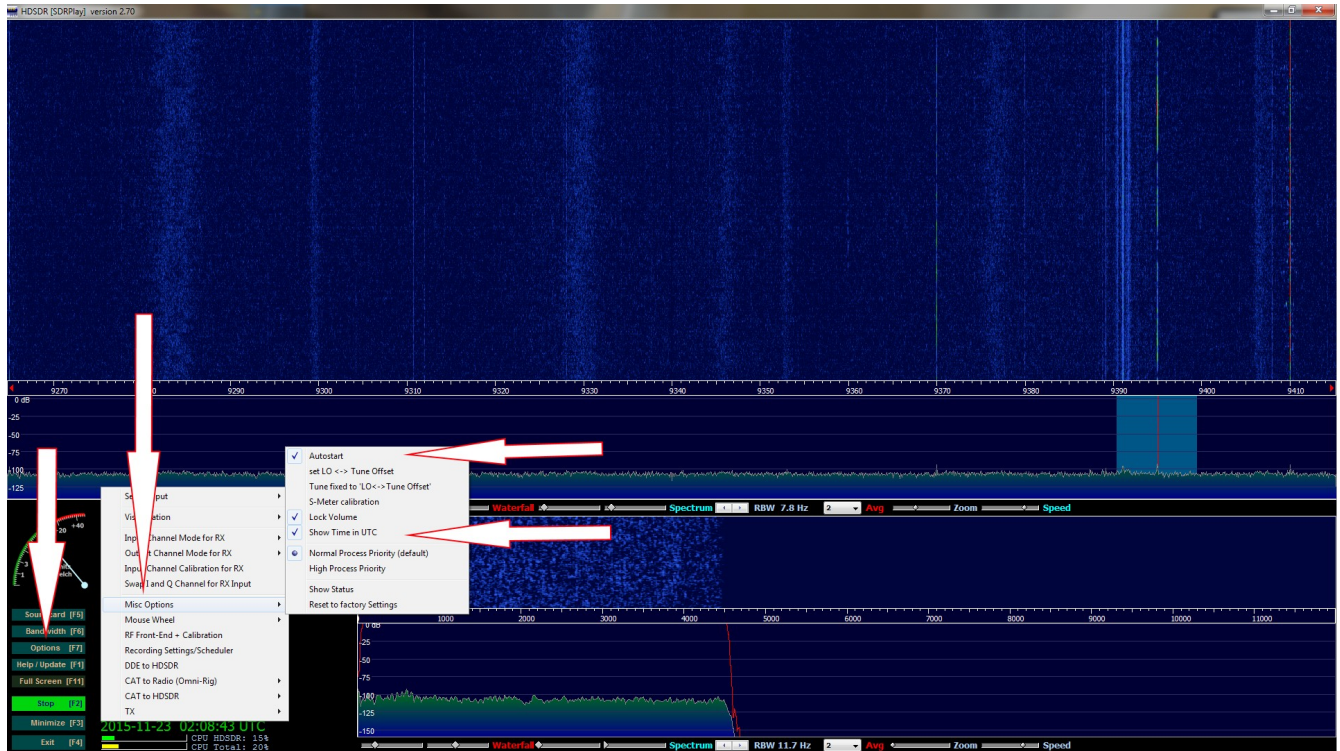
Set the clock the UTC and have HDSDR auto start on start-up:

1: Select Options

2: Misc Options

3: Check auto start

4: Show Time in UTC.

This setting tells HDSDR to start the RSP as soon as you launch it and covert the time on the main screen from standard time display to universal time display/

STEP-5
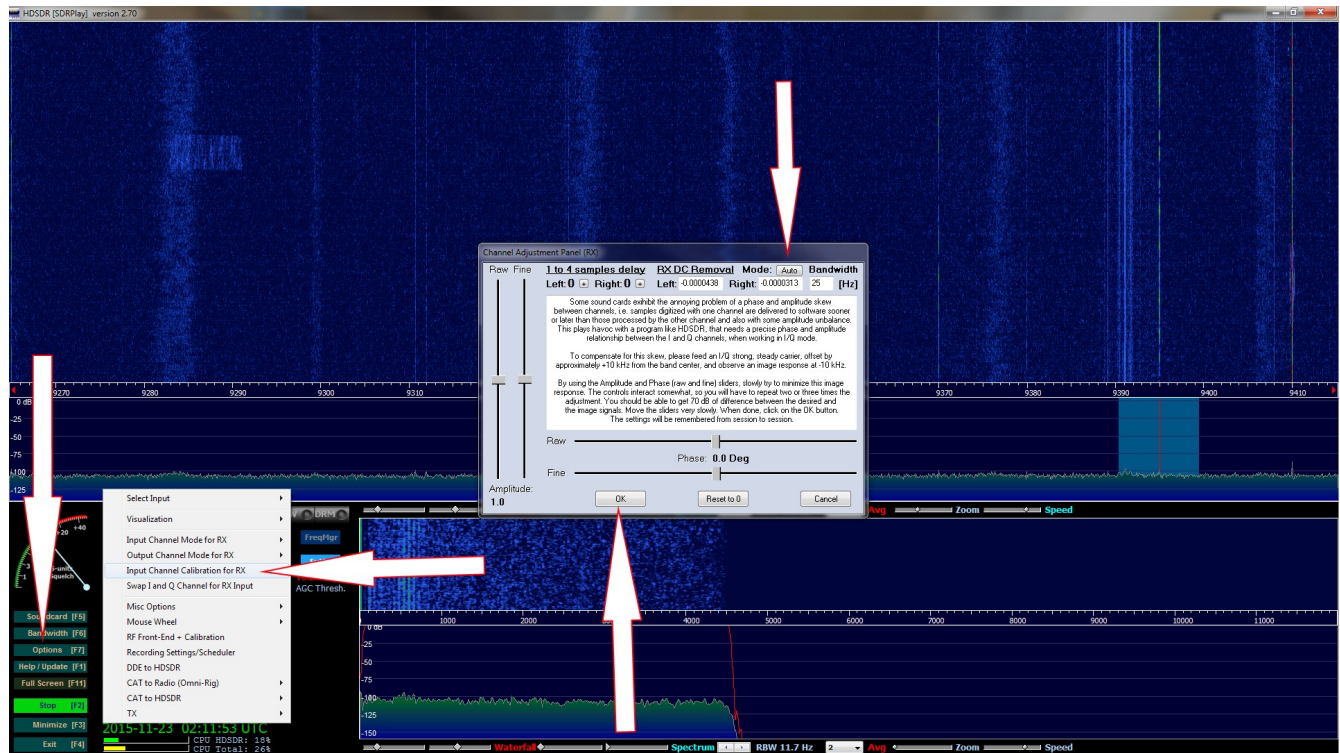

Set your mouse wheel tuning within the band and not LO:

1: Options

2: Mouse Wheel

3: Select Mode:Tune.

This setting tells HDSDR to tune within the current range selected and operating the RSP in HDSDR much smoother via the mouse wheel.
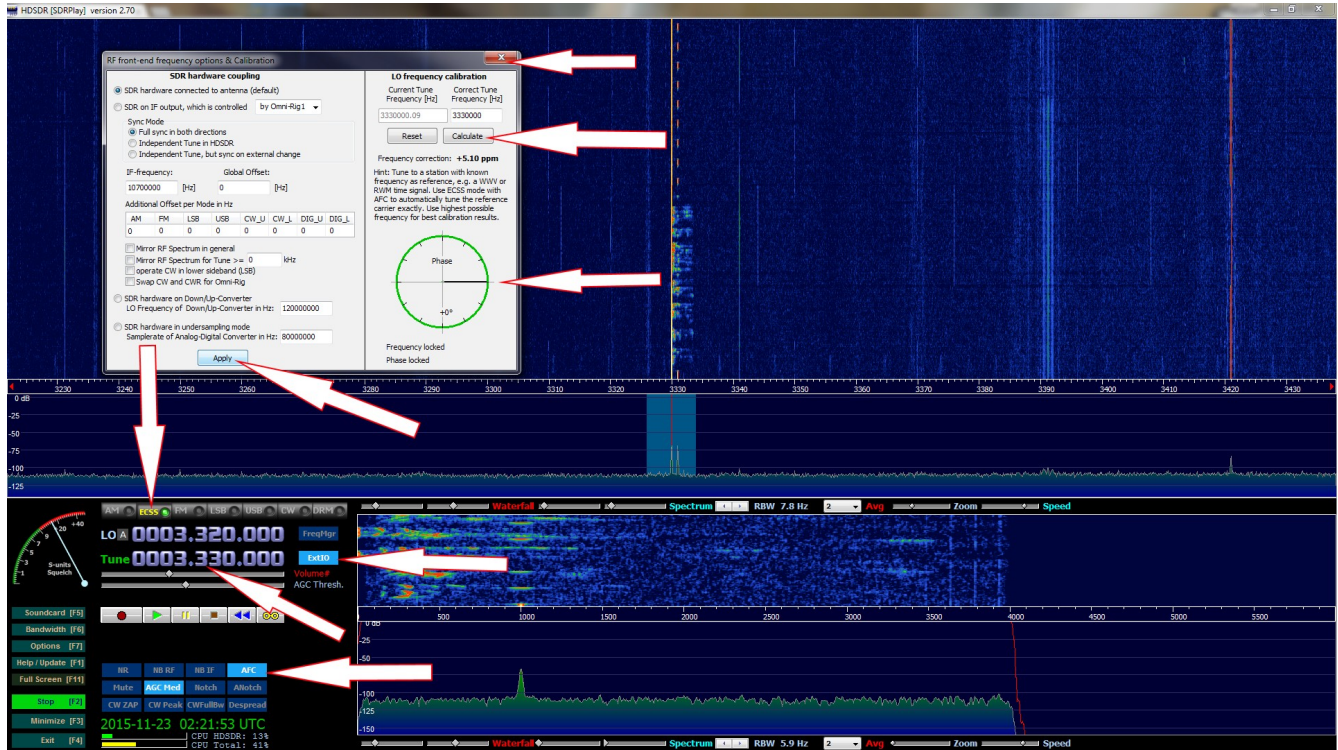
STEP-6

Remove the center DC spike:

1: Options

2: Input Channel Calibration for RX.

3: Change Mode at the top from Off to Auto

4: Click OK.

This setting tells HDSDR to calculate the best settings it thinks to remove the DC spike in the center of the waterfall display.

STEP-7

Calibrate the offset of your SDR:

1: Tune to the WWV(5 10 or 15 Mhz) or CHU Canada(3330 or 7850)

2: Change the mode to ECSS (To the right of the AM button) and make sure AFC is selected.

3: Right click on the EXT/IO button. Wait for it to get into 0 or as close to zero Phase

4: Click Calculate

5: Hit apply

6: Click the X to close it.

7: Change your mode back to AM.

This setting tells HDSDR how to adjust the offset that almost all SDRS have. Without this setting you will be off frequency by a few hertz.

Now let's setup the EXT/IO from SDRPlay. This configuration panel is not a one setting fits all. The most important and most overlooked setting is the Gain Control. Knowing the proper number to set the gain control is key to getting the best signal to noise ratio.

The gain control setting will tell the RSP how much or how little RF energy to pass into it's circuits which in turn relates to the signals seen on the waterfall and audio heard threw your speakers. To much gain and you will have massive intermixing signals called intermod and if the gain is set to low you will not hear or see anything at all.

SDRPlay's default setting is to allow the software to find the best setting for you with whatever you have selected at that given time on the waterfall. This is called AGC and it means automatic gain control. The EXT/IO driver will try it's best to have the RSP figure out the optimum signal to noise setting for you. I personally never use an AGC for HF listening. I suggest you disable it.
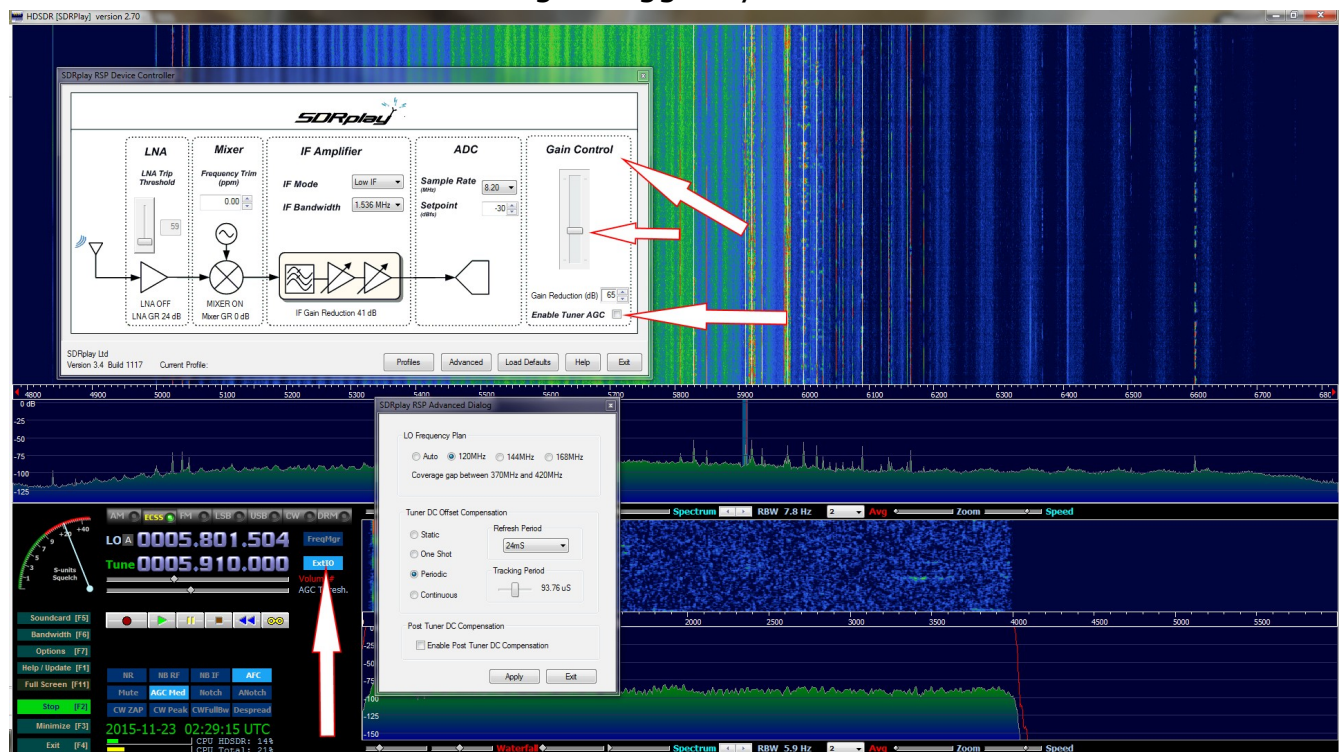
To disable the AGC click on the EXTIO button and uncheck the box that says "Enable Tuner AGC".

The next setting I suggest we disable is "Enable Post Tuner DC Compensation". What this setting does is the following. The EXT/IO will tell HDSDR what it thinks is the optimal setting to remove the DC center spike. We do not need to enable this setting because we told HDSDR to take care of this earlier with STEP-6.
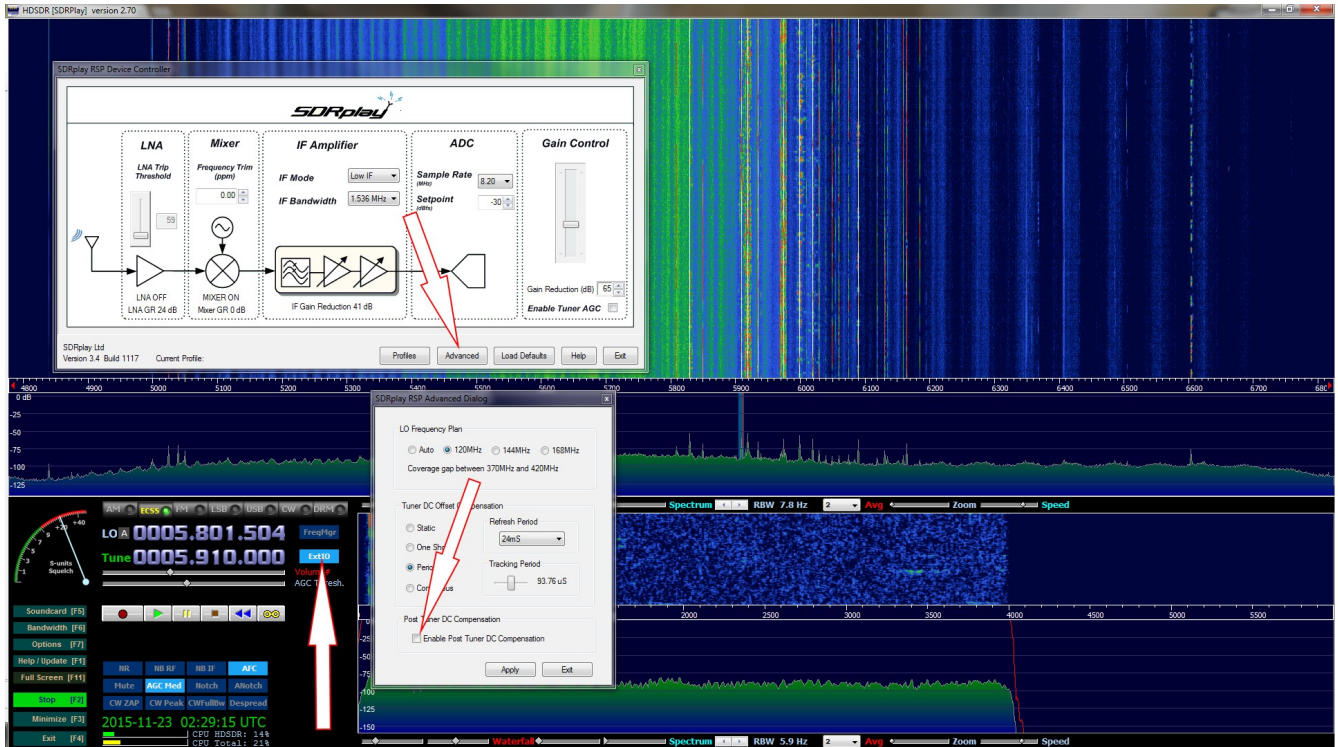
To Disable "Enable Post Tuner DC Compensation" click on the EXT/IO button. Select Advanced and uncheck the box that says "Enable Post Tuner DC Compensation" and hit OK and then exit.