

# BETA RELEASE NOTES and ERRATA

## PowerSDR™ 2.0.8

August 13, 2010

This release of PowerSDR 2.0.8 is a BETA release for use with the FLEX-1500™, FLEX-3000™ and FLEX-5000™ transceivers. Please check the list of updates and changes below as well as the known problems list before upgrading to 2.0.8. Please report any issues found in the FlexRadio bug tracker at <http://support.flex-radio.com/BugList.aspx?it=b>.

### **UPDATES AND CHANGES IN THIS RELEASE:**

*Reported Bugs and issues fixed in this release (since 2.0.7)*

- DE242 Fixed FLEX-3000 ATU problems when run without administrator privileges.
- DE114 Installer now uses localized version of "My Documents" folder on non-US PCs
- US155 FLEX-1500 Firmware can now be updated directly from PowerSDR if needed
- DE244 Fixed exception error when recording / playback
- DE209 Out of band transverter operation locks in transmit
- DE254 FLEX-1500: Split now transmits on the correct frequency (3041)
- DE255 FLEX-1500: TX Meter now shows appropriate value during CW transmit (3054)
- DE269 Added VHF Band selections to RX2 Band drop down menu (3009) (2992)
- DE207 Improved -datapath and -dbfilename command line arguments

Heros Technology [Tiny Preselector](#) hardware support has been added for the FLEX-5000/3000 via the FlexWire port (access control form with Ctrl+Shift+S). Support for this hardware is expected for the FLEX-1500 at some point in the future.

### **KNOWN PROBLEMS:**

- DE239 AM carrier level varies +/- 12dB with modulation
- DE237,
- DE243 Spurs may be visible in some modes other than CW (2865, 2795)
- DE84 FLEX-5000 and RX2 or VU: When operating separate bands on VFO A and B, it is possible to get into antenna setups that the hardware does not allow.

## FLEX-1500 OPERATION NOTES

1.) Testing and field reports on earlier releases have established that operation and performance of this software is best with Windows 7. The reasons are that Windows 7 comes with a new low latency sound card driver called Windows WASAPI that provides lower latency and better stability than any other Windows operating system. It also provides driver and USB port management that is friendly and essentially transparent, significantly improved relative to the two other operating systems.

Comparing Windows 7, XP and Vista, Vista has been the most troublesome. Instructions for use with all three Windows Operating systems are included below, but if you install this software under Vista, and are having difficulty or continuing problems, we will recommend that you upgrade to Windows 7, rather than continuing to fight Vista.

2.) CW Operation: As before, you can send CW with a straight key plugged into the key jack, an external keyer plugged into the key jack, or use the built-in CW keyboard software. All of these options will work well.

To use the built-in iambic keyer, we recommend that you use the Windows WASAPI audio (Sound Card) drivers in Windows 7. In Vista or XP you **MUST** download and install ASIO4ALL as described below in Section 6.

We recommend the smallest audio buffer settings (SetUp\Audio\Primary) that provide un-distorted audio and smooth keying. These will reduce latency to a minimum. The exact settings are dependent on your computer hardware.

3.) **Under Windows 7**, after running the installer, turn on the radio and allow the drivers to load. Then open PowerSDR, but **prior** to pressing the “START” button (upper left part of the window) for the first time.

- Go to SetUp\Audio
- Under Drivers, select “Windows WASAPI”
- Under Input, select “Microphone FLEX-1500”
- Under Output, select “Speakers FLEX-1500”
- Exit the screen.

This need only be done the first time the software is installed and set up.

4.) **Under Windows XP**, after running the installer, turn on the radio and allow the drivers to load, open PowerSDR, but **prior** to pressing the “START” button (upper left part of the window) for the first time.

- Go to SetUp\Audio
- Under Drivers, select MME
- Under Input, select “Microphone FLEX-1500”
- Under Output, select “Speakers FLEX-1500”
- Exit the screen.

This need only be done the first time the software is installed and set up.

If you wish to run the **internal iambic keyer under Windows XP**, you will need to download and install ASIO4ALL as described below in section 6, and select ASIO instead of MME as the audio driver. ASIO4ALL has noticeably lower latency and delay when using the iambic keyer.

5.) To use PowerSDR version 2.0.x with **Windows Vista**, you **MUST** download an extra sound card driver named “ASIO4ALL” from

<http://www.ASIO4ALL.com>

Download the latest version ASIO4ALL 2.10.

Run the PowerSDR 2.0.x installer and follow the instructions.

Prior to opening PowerSDR, power up the FLEX-1500 radio, and allow the FLEX-1500 drivers to install.

Run the downloaded “.exe” file from ASIO4ALL.

When you reach the page for selection of components to install, also select “Off Line Settings” for download.

**Prior** to running PowerSDR, start and run “Off Line Settings”, by going to (Computer) START/All Programs/ASIO4ALL/ASIO4ALL Offline Settings

In this “Off Line Settings” application,

Click “FLEX-1500”

Adjust the ASIO Buffer size to 256 bytes.

(You may also try 128 and 64 bytes. Do NOT use intermediate values.)

(Do not set the PowerSDR\SetUp\Audio\Primary buffer smaller than the ASIO buffer.)

Close the application.

Now, open PowerSDR.

Go to SetUp\Audio

Under Drivers, select ASIO

Under Input and Output, select ASIO4ALL

Exit the screen.

Now press the “START” button for normal operation of PowerSDR.

If you are unsuccessful getting PowerSDR 2.0.x to operate acceptably under Vista, our recommendation will be that you upgrade to Windows 7. Results in field testing so far, have been mixed.

6.) The IF offset default is set to 9 kHz in this software release. This causes the centering of the received passband to be slightly off to the side. If you want better centering, you may check the "Expert" box in SetUp/General/Hardware Config and set the IF in Hz to some value between 500 Hz and 5000 Hz for better centering.

7.) The USB driver for this radio will "steal" the audio for the computer, such that when this radio is plugged in, the speaker sound for the computer will come out of the radio speakers/ headset jack. It also means that any sounds the computer makes or is playing back will be sent out the radio when transmitting.

To prevent this, go to (in the computer) START/Control Panel/Sounds and set your existing/internal sound card as the "Default."

This issue will be fixed in a future release by replacing the sound drivers for the radio, such that the radio is no longer recognized as a sound card by the computer. Although no sound card is involved, and this radio does not require a separate sound card, the radio currently appears to the computer as a sound card, and most computers will send the sound to the last sound card to appear, unless the default assignment as described above is made.

8.) The SPUR REDUCTION (SR) control is default "ON." The frequency span of the Panadaptor screen will be wider with SR turned off. Since there are extremely few spurs visible on the FLEX-1500, the recommended normal use of SR is "OFF."

9.) To deal with the few milliseconds of noise that are sometimes sent at the first dit of a session in CW, or the beginning of a transmission in SSB, a new feature has been added to PowerSDR called a "Blanking control." This is a temporary solution until the new custom drivers are available in a future ".dot" release.

This is located at SetUp/Transmit, in the lower left, labeled FLEX-1500. The window is in units of milliseconds, with a default of 200 (milliseconds.)

This feature mutes the speaker and transmitted signal for the time shown during change over from receive to transmit, or transmit to receive.

If a noise burst is heard at the beginning of a transmission, you may increase this value. The value may be reduced to speed up receive to transmit switching times, if no noise burst is being heard.

Understand that the optimum value is different for different systems, and will change with different buffer size settings. If you are running different buffer settings for different modes, you will have to either change this setting when switching modes, or set it at the largest setting for any of the modes.

## **FLEX-5000 and FLEX-3000 OPERATION NOTES**

1.) If the FLEX 3.5.2.8028 Firewire driver fails to load properly after installing PowerSDR v2.0.8, it will prevent previous version(s) of PowerSDR from working correctly. On rare instances, a previous Firewire driver install can prevent the Integrated Installer from properly installing the Firewire driver. If this condition exists after installing PowerSDR v2.0.x, remove all previous Firewire driver installations and perform a new driver installation by running the following procedure.

- a.) Shut down PowerSDR and power off your software defined radio
- b.) If the FLEX Firewire control panel is open, close it.
- c.) Run the PowerSDR v2.0.8 Integrated Installer and select the REMOVE option
- d.) Using the Windows Control Panel, select the Remove Program applet
- e.) Look for any instances of the FLEX Firewire driver. They will be listed as FlexRadio 3.5.2.8028 or FlexRadio 3.5.0.7171. Remove all instances of the FlexRadio Firewire driver
- f.) Reboot your PC
- g.) Run the PowerSDR v2.0.x Integrated Installer Suite setup program
- h.) After the PowerSDR v2.0.x Integrated Installer has completed, reboot your PC as requested.
- i.) After the PC has completely booted up, power on the FLEX-x000 and allow the Firewire driver to complete its installation. For Vista and Win7 operating systems this is performed silently without any user intervention. For XP systems, the user will have to confirm three sub-driver installations (see the PowerSDR v2.0 Quick Start Guide for your particular SDR for additional details on installing the Firewire driver)
- j.) Verify that the Firewire driver is properly installed by opening the FLEX Firewire Driver Control Panel. The FLEX-x000 should be a recognized device
- k.) Start PowerSDR 2.0.x and proceed with the initial setup wizard.

2.) You can run a FLEX-x000 SDR and a FLEX-1500 on the same PC at the same time as long as you use separate databases for each radio. With PowerSDR v2.x.x, you can instruct PowerSDR what folder to use by using the –datapath “runtime” command. Please refer to the Knowledge Base Article “[Using Alternate Databases with PowerSDR 2.x](http://kc.flex-radio.com/KnowledgebaseArticle50469.aspx)” (<http://kc.flex-radio.com/KnowledgebaseArticle50469.aspx>) for detailed information on how to use this feature.

## ***Firmware Upgrade Procedures***

In order for your FlexRadio Systems software defined radio to operate optimally and to support all of the features contained in PowerSDR 2.x, your radio hardware may need a firmware update. The firmware binaries needed for these updates were copied to your PC as a result of running the PowerSDR 2.x Integrated Installer, so there is no need to download SDR specific firmware from the FlexRadio Systems web site.

If you are prompted by PowerSDR 2.x that your FlexRadio Systems SDR requires a firmware update or you are instructed to do so in these release notes, then shut down PowerSDR v2.x and update your software defined radio with the latest firmware binary (version number) that is located on your PC using the SDR specific instructions below.

### **Firmware Upgrade Prerequisite**

For all FlexRadio Systems SDRs, the hardware or device driver that facilitates the communication between the radio hardware and your PC must be installed and operational prior to upgrading the firmware. The drivers and their installation for your FlexRadio Systems SDR is performed as one of the steps executed by the PowerSDR v2.x Integrated Installer. Once the driver installation is complete, if you want to verify its operation, see the radio specific instructions below.

### **Upgrading the FLEX-5000 and FLEX-3000 Firmware**

To upgrade the FLEX-5000 and FLEX-3000 firmware, refer to the following Knowledge Center (KC) article, How to Update the FLEX-5000/3000 Firmware (<http://kc.flex-radio.com/KnowledgebaseArticle50441.aspx>) after you have run the PowerSDR 2.x Integrated Installer and completed the Firewire driver installation. The above KC article will instruct you where the firmware binary is located and how to install or “flash” it to your radio hardware.

You may want to verify that the FLEX-5000 or FLEX-3000 Firewire driver is loaded and operating properly before attempting to upgrade the FLEX-5000 or FLEX-3000 firmware. Refer to the flowing KC article How to Install or Upgrade the FLEX Firewire Driver (<http://kc.flex-radio.com/KnowledgebaseArticle50137.aspx>) **Step 14** to determine if your FLEX-1500 is properly communicating with your PC.

### **Upgrading the FLEX-1500 Firmware**

If a FLEX-1500 firmware upgrade is necessary, a prompt will be shown when starting PowerSDR to immediately upgrade the firmware within the application. Please follow the prompts carefully to update your firmware.