

PowerSDR™ 2.0.x Limited Beta Release Notes

This limited Beta release of PowerSDR should not be used with the FLEX-1500. The FLEX-1500 radios in the field being used by Beta teams are currently relying on a “driverless installation” using the Windows built-in drivers for a HID device and a sound card. PowerSDR 2.0 (in this Beta) is built using a new custom USB driver for the FLEX-1500 which has not been made available to the field. The FLEX-1500 will not function with this limited beta release of PowerSDR.

What's New in PowerSDR 2.0

PowerSDR 2.0 has been in development for well over a year and contains many improvements over previous versions. Below is a list of notable features added to PowerSDR 2.0:

- New user interface — PowerSDR 2.0 gets a facelift with the new “skinning” feature which allows for the alteration of backgrounds, buttons, images and colors. PowerSDR is shipped with a number of predefined skins and users may create their own skins.
- Automated Wide Band Image Reject (WBIR) — automatically nulls receive images to the noise floor in most situations
- Enhanced ALC algorithms provide absolute power control. Setting the maximum power setting in the PowerSDR console will set the maximum output power of the radio with <10% overshoot
- Downward Expander Transmitter Gain Shaping — gradual noise gate provides for softer reduction of background noises encountered in speech lulls.
- Enhanced Notch and Noise Reduction — a tune-up on these algorithms provides better capabilities in both
- Introductory Diversity Features — FLEX-5000 owners can benefit from the ability to use the synchronous main and RX2 receivers to increase SNR for signals by dynamically altering the relationship between antennas using a software control
- Completely Revamped CW — Through latency reduction and other algorithmic changes, CW performance has been substantially improved
- TX/RX Turnaround Reduction — reductions in the time from TX to RX and back help with both CW and digital modes
- Greatly Improved FLEX-3000 ATU Performance — The FLEX-3000 ATU, designed to be a 3:1 tuner in hardware, is now able to tune 7:1 across all bands in most cases and can often tune significantly higher SWRs. Also memory tune and antenna profiles have been added.
- Support for the FLEX-1500 — FLEX-1500 support is now being added, but is not complete for the initial limited beta release
- Integrated Installer — A single “wizard-like” interface now installs PowerSDR and ancillary components without the need to download and install individual pieces.
- Run-time option to select different base folders for user variable data allowing the ability to run a Firewire based FLEX-x000 and a FLEX-1500 on the same PC
- PowerSDR is compliant with Vista and Win7 allowing no user data in protected file system areas

- Multiple new CAT commands for greater integration with DDUtil
- Ability to tune VFO-B with Mouse Wheel
- Auto-Sync of Firewire sampling rate and buffer size with PowerSDR defined values
- New default parameters for the Leveler
- Updated threading improvements
- Updated PortAudio drivers
- Alpha control (contrast) for main and MultiRX pass-band filters
- Added FM deviation control
- Integration of PAL library for firewire platforms for improved computer-to-radio communications performance

System Requirements

Operating Systems

- Microsoft Windows XP (32-bit)
- Microsoft Windows Vista (32 or 64-bit)
- Microsoft Windows 7 (32 or 64-bit)

Minimum Hardware

- Processor with minimum Passmark of 800 and L2 cache of 2MB or larger
- 2GB RAM
- 50MB hard disk space for PowerSDR and associated components
- Up to 450MB hard disk space for Microsoft .NET framework libraries

Additional Supplied Software

- FlexRadio firewire driver v3.5.2.8028 (included with integrated installer)
- Recommended radio firmware revisions: FLEX-3000 (2.0.1.2), FLEX-5000 (2.0.2.2)

Known Issues

- Will not operate with a FLEX-1500 device without new firmware. Do not use with the FLEX-1500 at this time
- SDR-1000 only operates using PowerSDR 2.0 on 32-bit platforms
- SDR-1000 has not been tested on this release and may have issues. Using PowerSDR 2.0 on a SDR-1000 is not recommended at this time
- Firewire driver 3.5.0.7171 has raspy audio after a succession of long duration DPCs. v3.5.2.8028 is somewhat better (and is included with this release). This issue in the Firewire driver is being researched by our driver partner
- When the Panadapter display is zoomed in to the max using the sliders, the signal is a few Hz high from what is displayed on the VFO

Other Notes

- CW performance will only be optimal on the FLEX-3000 and FLEX-5000 if MIDI is enabled on the host computer. A fall-back mode is present which will run using the PAL driver with reduced performance. If you do not have the MIDI driver installed and would like better CW performance, you will need to troubleshoot the driver installation for your Firewire card. The FlexRadio Systems Knowledge Base has a number of articles on firewire cards and the MIDI driver

PowerSDR Beta V2.0.0 Beta Rollback Procedure

PowerSDR V2.0.0 is significantly different from previous versions. If you discover that you need to return back to PowerSDR V1.18.6 (current release), please follow these instructions.

1. Turn off your radio
2. Go to the "ADD / REMOVE PROGRAMS" Application on your PC. (Varies by Operating System)
 - a. REMOVE "FlexRadio Systems Software 2.0 Beta"
 - b. REMOVE "FlexRadio 3.5.2.8028"
3. Go to the www.flex-radio.com homepage and scroll down to the section "Current Versions of Software and Documentation."
 - a. Click and download/Install "FLEX Firewire Driver"
 - b. Click and download/Install "FlexRadio PowerSDR"
4. Power on your radio
 - a. Click and download/Install
 - i. FLEX-3000 Firmware or,
 - ii. FLEX-5000 Firmware