

Excitement to go!™



FLEX-1500™

HFHF-6m Transceiver

Quick Start Guide

Version 2.5

www.flexradio.com

sales@flexradio.com 512-535-4713

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Important Notice – Please Read Before Operating the Software Defined Radio

WARNING

This radio has been configured to operate in your country according to your nation's regulations. It will operate on frequencies which are not allowed for public use. You are required to have a valid amateur radio license of an appropriate class from your government to have the privileges to operate on amateur radio frequencies.

Except those actions which have been described in the Quick Start Guide and in the Owner's Manual which are provided with this radio, no other manipulations to the radio are allowed. The unit must only be opened and/or serviced by a qualified technician. Do not operate the unit in environments with high humidity or high ambient temperatures as this will adversely affect the radio's cooling efficiency.

Please study the Quick Start Guide and the appropriate Owner's Manual prior to operating the unit. These documents contain important information for safe operation.

If you have any questions, please refer to the Owner's Manual first or contact FlexRadio Systems Support (see below).

GETTING HELP

If you experience any issues getting your new software defined radio operational, please contact our Technical Support group directly for assistance using one of the methods outlined below. There are also several "Self-Help" sites for useful information. The FlexRadio Users or FlexEdge reflectors, Flex Forum, and the FlexRadio Yahoo group are all great resources. Note that OFFICIAL support for FlexRadio Systems' products is only available directly from FlexRadio Systems Technical Support.

The FlexRadio Systems HelpDesk

The easiest and quickest way to obtain assistance from one of our technical support engineers is to submit a support request via our HelpDesk ticketing system (<http://helpdesk.flexradio.com>) to get a case number assigned for your incident. Click on the **Submit a Request** link in the menu bar to get started. If you have not previously submitted a request for a HelpDesk support ticket, you will need to fill out the **Submit a Request** web page in its entirety which will create your HelpDesk ticket and your account. A confirmation e-mail will be sent to you to verify access to your e-mail account. Please reply to verify your account. During normal business hours, an engineer will usually acknowledge your support request within 2 hours of submission.

FlexRadio Support Group

Alternatively you can contact the FlexRadio Support Group via e-mail at support@flexradio.com or by phone at +1 (512) 535-4713 to receive a case number for your incident from the HelpDesk ticketing system.

Introduction

Important Notice – Read Before Operating This Unit

i - Information

Δ - Caution

! - WARNING!

i - This radio has been configured to operate in your country according to your nation's regulations. It will operate on frequencies which are not allowed for public use. You are required to possess a valid amateur radio license of an appropriate class from your government to transmit on amateur radio frequencies.

i - Except as described in this Quick Start Guide and the included FLEX-1500 Owner's Manual, no other operation or modification of this radio is allowed. Any other use or modification (including software changes that affect operational characteristics) will void the manufacturer's warranty.

! - This unit is NOT A TOY. It must not be handled by children nor placed/operated within reach of children.

! - Do not leave packing material for this unit unattended. It may be harmful to children if misused.

! - This unit contains small parts that could be a choking hazard to small children. Do not leave accessories unattended.

Δ - This unit must only be opened and/or serviced by a qualified technician.

! - Do not operate this unit in potentially explosive environments.

Δ - Do not operate this unit in areas of extreme humidity.

Δ - Avoid operating this radio in direct sunlight or other areas of extreme heat, excessive vibration, or mechanical force.

i - Ensure proper ventilation around the radio.

! - Never attempt to insert wires or any tools into the interior of this unit during operation. This may cause fire or electric shock.

! - This unit must only be operated with the electrical power described in this Quick Start Guide. NEVER CONNECT THE +13.8VDC POWER CONNECTOR DIRECTLY TO AN AC OUTLET. This may cause a fire, injury, or electrical shock.

Δ - This unit generates Radio Frequency (RF) energy. Use caution and observe proper safety practices regarding your system configuration.

! - Never connect or disconnect antennas while in TRANSMIT mode. This may cause electrical shock or RF burns to your skin.

Δ - When using earphones, use caution when adjusting the volume to prevent any harm to your hearing.

i - If you operate this unit in conjunction with an appropriate linear amplifier, always make sure your output power is below the maximum input limits of the amplifier. Consult your amplifier owner's manual for proper connection and operation.

Δ - If this unit is intended for use in commercial applications, special safety regulations and cautions may apply to prevent accidents.

Δ - If any defect, abnormal result, or other observations occur that are not covered by this Quick Start Guide or the Owner's Manual; immediately cease operation and contact the manufacturer or local distributor for operational advice or repair of the unit.

i - Please study the complete Quick Start Guide and Owner's Manual. These documents contain important information regarding the safe operation of this unit. If you have any questions, please contact the manufacturer or local distributor for further information.

Introduction

Thank you for choosing the FlexRadio Systems® FLEX-1500™ transceiver. The FLEX-1500 is a highly versatile transceiver, designed to meet your demanding Amateur Radio needs. The FLEX-1500 transceiver, powered by our World Famous PowerSDR™ operating software, creates the perfect Software Defined Radio environment.

Although setting up the FLEX-1500 is possibly a little different than you may have experienced with a traditional transceiver, it is not any more difficult, as this Quick Start Guide will demonstrate.

The Quick Start Guide is designed to get you on the air with minimum effort. To do this, we assume a basic HF installation and do not delve into all the FLEX-1500 and PowerSDR's many possibilities. For that, we urge you to review the FLEX-1500 Owner's Manual.

To get your FLEX-1500 on the air you will need:

- The two cables and CD-ROM that came with your FLEX-1500.
- An HF-Antenna or dummy load.
- A good RF ground.
- Powered (computer type) speakers, or headphones.
- A stabilized 13.8V DC power supply, capable of 1.5A continuous, 2A peak duty.
- A Windows® PC, with a USB 1.1 port.
- A microphone/PTT and/or CW paddles/keyer/straight key.

If you run into any trouble during the set-up process, please:

- Recheck your steps.
- Review the Owner's Manual.
- Refer to the **Getting Help** section above.

The following 4 steps will run you through the process of getting on the air

Step 1: Hook Up the FLEX-1500

Step 2: Install PowerSDR 2.x

Step 3: Power-Up the FLEX-1500

Step 4: Configure PowerSDR

This Quick Start Guide provides only the basic steps to set up your FLEX-1500. For more information, you are referred to the FLEX-1500 Owner's manual, which can be found in the *Docs* folder on the CD-ROM that came with your transceiver.

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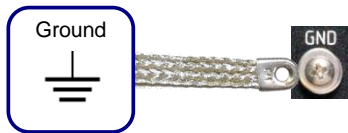
Step 1: Hook Up the FLEX-1500

In Step 1 you will make all the physical connections required for basic HF/6m operation of the FLEX-1500.

Back Panel

A: Ground

Connect the terminal marked **GND** to your central station ground. **NOTE: Make your GROUND connection FIRST!**



B: Antenna

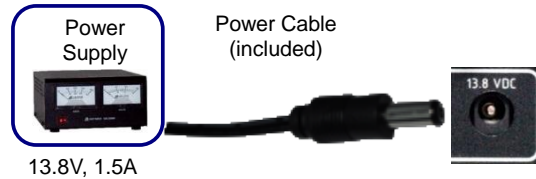
Connect an HF antenna with a 50 Ohm impedance or a dummy load to the BNC antenna port marked **ANTENNA**.



C: Power Supply - Do Not Power up the FLEX-1500 at this time.

Use the power supply cable that came with your FLEX-1500 to hook up a stabilized 13.8V DC power supply to the jack marked **13.8 VDC**. The power supply must be rated for 1.5A continuous duty, 2A max. The power cable is un-terminated at one end to allow you to attach your own connector(s) if needed. Make sure the wire with the stripe goes to the positive and the solid color wire to the negative terminal of your power supply. The polarity of the power connector is wired so that the center pin is positive (+) and the outer connector jacket is negative (-).

F1.5K-Q2.5



NOTE: If your power source is not current limited, you must add a 5 amp fuse (not included) to the power supply cable.

Front Panel

D: Paddles/Keyer/Key

Connect your CW paddles, keyer or straight key to the jack marked **KEY** using a 1/8" stereo (TRS) plug.

For paddles or a keyer, connect the Tip to DOT, Ring to DASH and Sleeve to common. For a straight key, connect Tip to KEY and Sleeve to common. Do not connect the Ring.

The PowerSDR Keyer is configured for iambic paddles by default. To change this, please see the FLEX-1500 Owner's Manual.

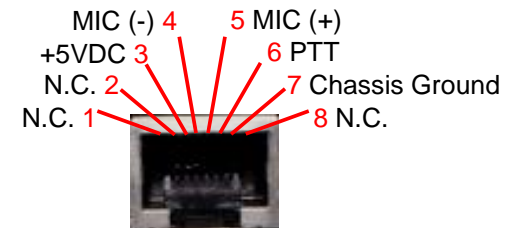


E: Microphone/PTT

Connect your microphone/PTT to the RJ-45 **MIC** jack.



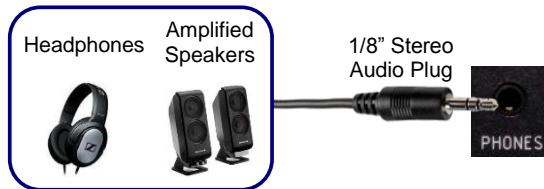
The pin-out of the microphone jack is shown below:



Step 1: Hook Up the FLEX-1500

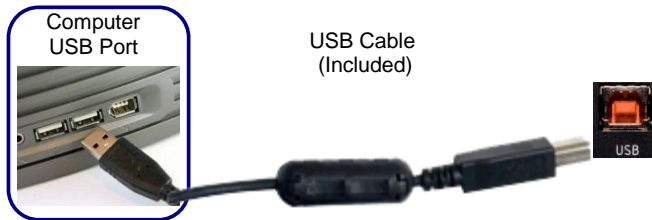
F: Phones

Connect either stereo headphones or powered stereo speakers, e.g. a pair of computer speakers, to the jack marked **Phones** using a 1/8" stereo (TRS) plug.



G: USB

Locate the USB cable that came with your transceiver. Connect the end with the ferrite core to the jack marked **USB**. Connect the other end to the USB 1.1 jack on your computer. The plugs should insert easily with no extra force.



Proceed to Step 2: Install PowerSDR on the next page.

Step 2: Install PowerSDR 2.x

In Step 2 you will run the PowerSDR Setup application to install the software. This will start the FlexRadio Installer Wizard. The Wizard will:

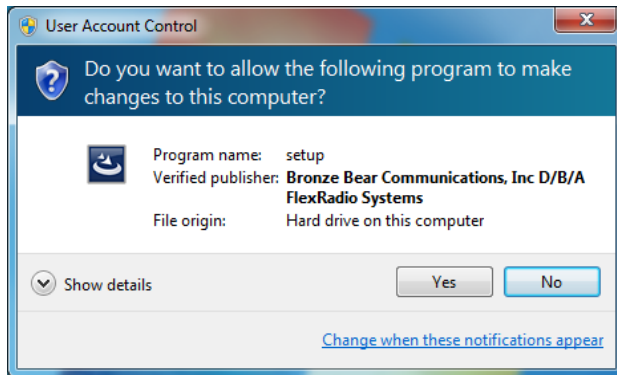
- A. Collect your information.
- B. Start the FlexRadio Driver Setup Wizard to install the FireWire driver.
- C. Install PowerSDR.

A. Collecting Your Information

Insert the CD-ROM that came with your FLEX-1500 and PowerSDR Setup will automatically run. Alternatively, PowerSDR Setup can be downloaded from the FlexRadio website:

<http://www.flexradio.com/>

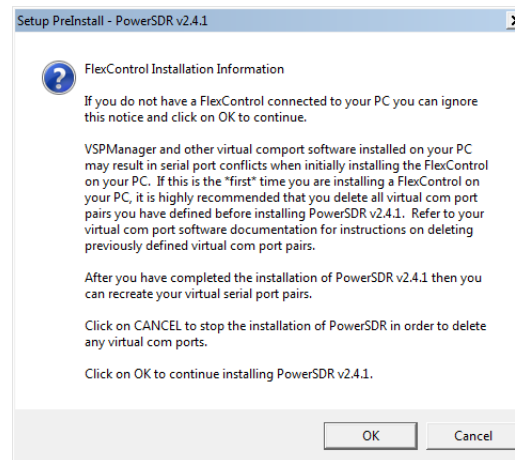
If you see a User Account Control screen (Windows Vista or Windows 7), click **Yes**.



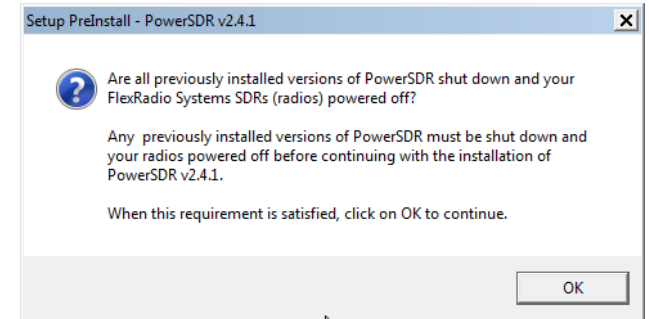
The FlexRadio Systems Integrated Installer will start, showing a series of pre-installation screens starting with a Reboot Notification recommending that you save and close any open files and running programs:



Click **OK** to continue or Cancel to terminate the installation of PowerSDR 2.x. The FlexControl Installation Information screen is displayed:

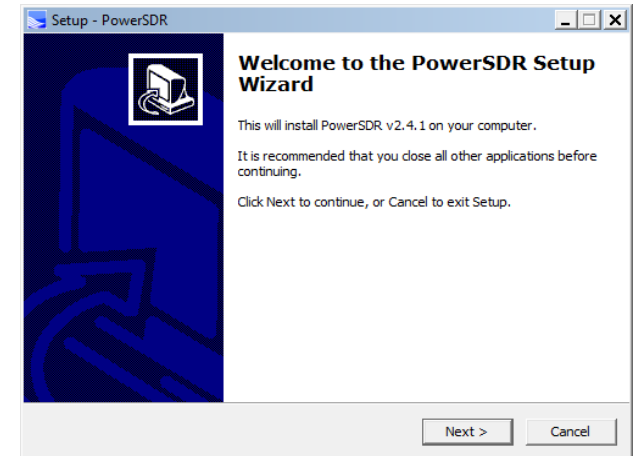


Click **OK** to continue or Cancel to terminate the installation of PowerSDR 2.x. A warning screen is displayed reminding you to shut down your FlexRadio Systems SDR and any running versions of PowerSDR.



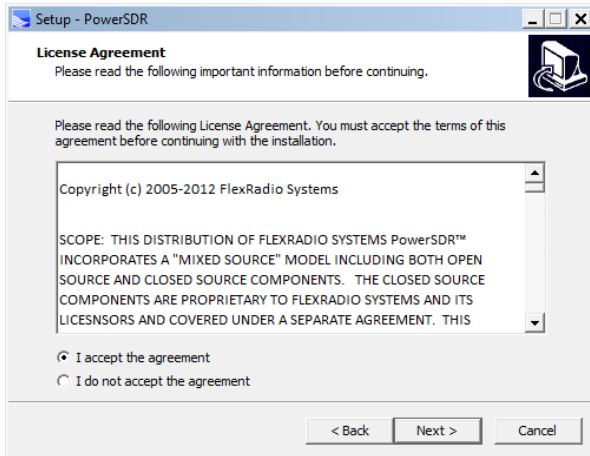
After making sure all previous versions of PowerSDR are not running, Click **OK** to continue.

The PowerSDR v2.x Setup screen will now indicate that it is ready to install PowerSDR.

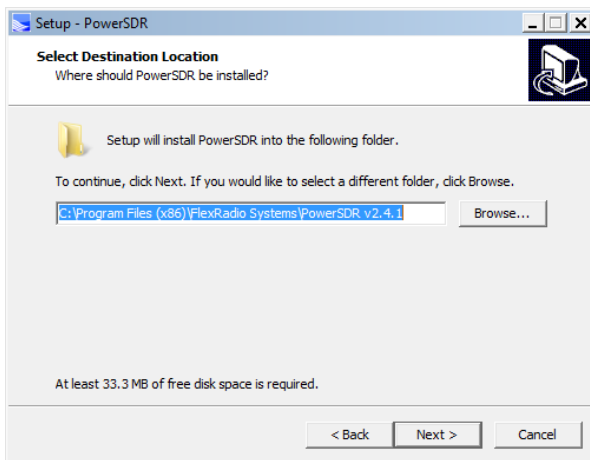


Click **NEXT** to continue or Cancel to terminate the installation of PowerSDR 2.x. The License Agreement screen will be displayed.

Step 2: Install PowerSDR 2.x



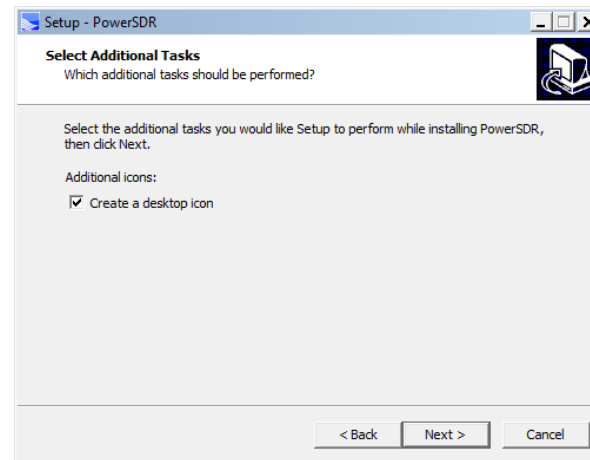
Click on "**I accept the agreement**" and then click **NEXT** to continue or Cancel to terminate the installation of PowerSDR 2.x. The Select Destination Location screen will be displayed. You may install PowerSDR on any drive or location, but it is recommended to use the defaults.



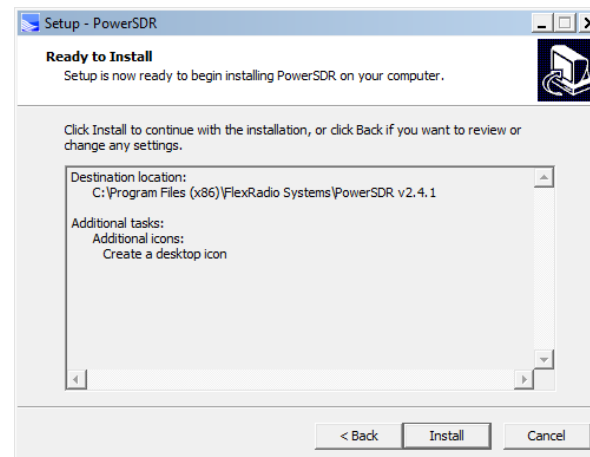
Click **NEXT** to continue or Cancel to terminate the installation of PowerSDR 2.x. The Select

Additional Tasks screen will be displayed.

It is highly recommended that you create a desktop icon for PowerSDR 2.x

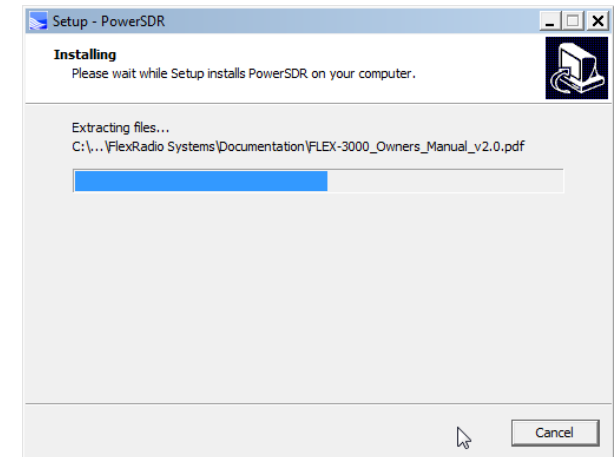


Click **NEXT** to continue or Cancel to terminate the installation of PowerSDR 2.x. The Ready to Install screen will be displayed.



Click **INSTALL** to begin the installation of PowerSDR v2.x and all required device drivers.

PowerSDR v2.x will begin to install the necessary files and drivers to operate your software defined radio. Several different screens will be displayed showing its progress.



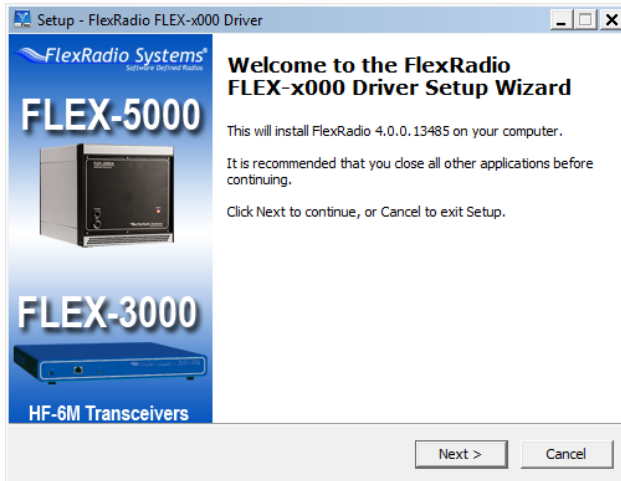
After all of the required files for PowerSDR v2.x are installed, the FlexRadio Firewire driver will be installed or upgraded. **Even though you are installing a FLEX-1500 which is not a Firewire based radio, the Firewire driver is pre-installed to prevent the re-installation of PowerSDR in the event you decide to upgrade your radio in the future.**

Proceed to Step 1 – Section B: Installing the Firewire driver.

Step 2: Install PowerSDR 2.x

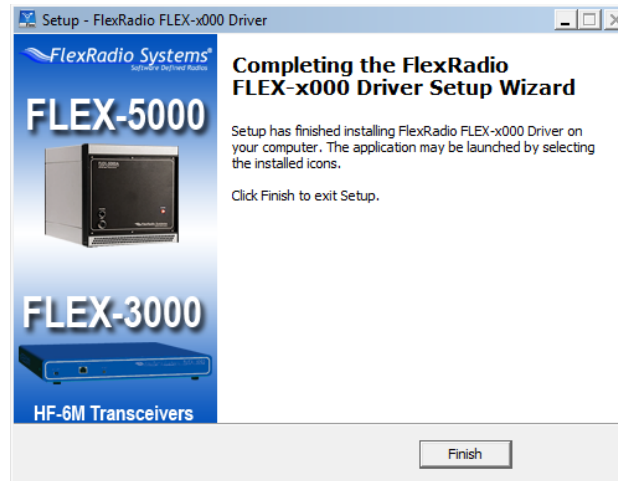
B. Installing the FireWire Driver

The FlexRadio Driver Setup Wizard will now start up with a welcome screen:



Click **Next** on this and subsequent screens to accept the default settings. Then click **Install**. If a Software Installation warning appears, click **Continue Anyway** to proceed.

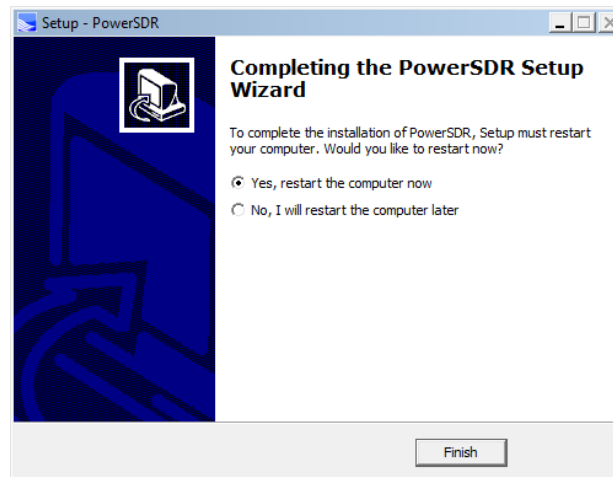
After installing the driver, the FlexRadio Driver Setup Wizard will indicate that it has completed installation:



Click **Finish** to exit the FlexRadio Driver Setup Wizard.

C. Completing the PowerSDR v2.x Installation

The FlexRadio Systems Integrated Installer will now complete the installation of PowerSDR 2.x by displaying the Completing the PowerSDR Setup Wizard.



Click **Finish** to exit the Installer Wizard.

Proceed to Step 3: Power-up the FLEX-1500 on the next page.

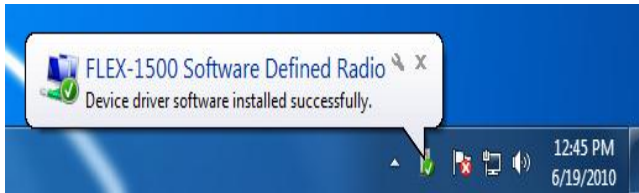
Step 3: Power-Up the FLEX-1500

In Step 3 you will power-up your FLEX-1500 to complete driver installation.

Power up your FLEX-1500: press and latch the **Power** button (the LED will light up). What happens next depends on your operating system.

Windows Vista® & Windows 7®:

Windows will indicate that it recognizes the FLEX-1500 and load the drivers in the background. When completed, a notification will appear on the task bar indicating successful installation:



Proceed to Step 4: Configure PowerSDR.

Windows XP®:

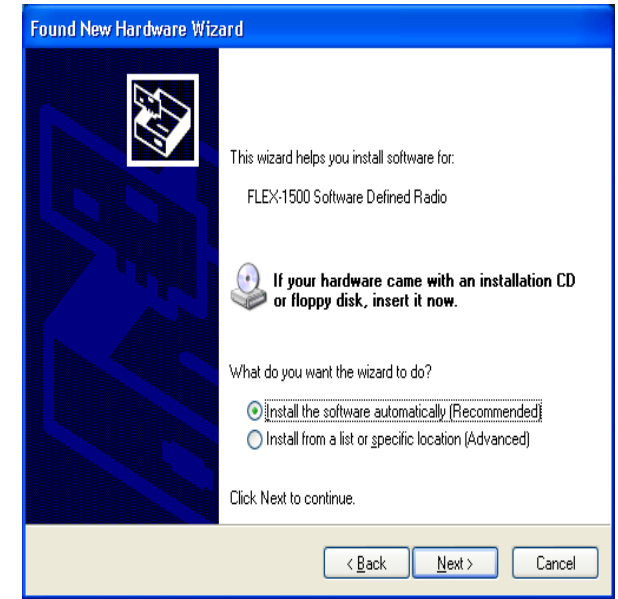
(NOTE: Depending on your PC/software, you may be asked to install up to 5 separate drivers. Repeat the following steps up to 5 times. Please complete every step as shown below.)

Your computer will detect the FLEX-1500 and display the **Found New Hardware Wizard** Welcome screen:



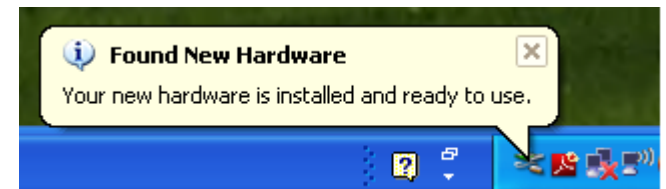
Select **No, not at this time** and click **Next**.

Select **Install the software automatically (Recommended)** and click **Next**. The Wizard will now find and install the FLEX-1500 driver, after which it will display an installation complete screen:



Click **Finish** to complete the installation of this driver.

Repeat this process until ALL drivers are installed. When all drivers are installed you will see this in the lower right portion of your PC screen:



[Continued on next page]

Step 3: Power-Up the FLEX-1500

NOTE: The FLEX-1500 must be powered off when you start your computer. Once the computer has completely booted up, then press the power button to turn on the FLEX-1500. If the FLEX-1500 is powered on when you start your computer, the driver may fail to load properly and the radio will not connect to PowerSDR. It is a "Best Practice" to power off the FLEX-1500 when you shut down the computer.

Proceed to Step 4: Configure PowerSDR on the next page.

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Step 4: Configure PowerSDR

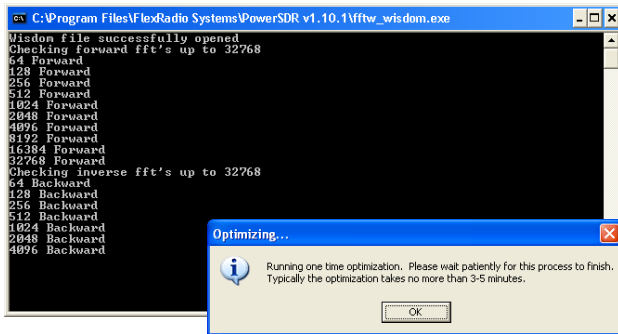
In Step 4 you will Configure PowerSDR

A: Run the PowerSDR Setup Wizard

Turn on your FLEX-1500 and run PowerSDR, by double-clicking on its desktop icon

Alternatively, click on **Start, All Programs, FlexRadio Systems, PowerSDR 2.n.n (folder), and PowerSDR v2.n.n.**

The first time PowerSDR starts up it will run an optimization routine. Click **OK** and let the routine run.



Next the PowerSDR Setup Wizard will start and a Mobile Warning screen will open. Click **Continue**, and you will see a Welcome screen. Click **Next**.

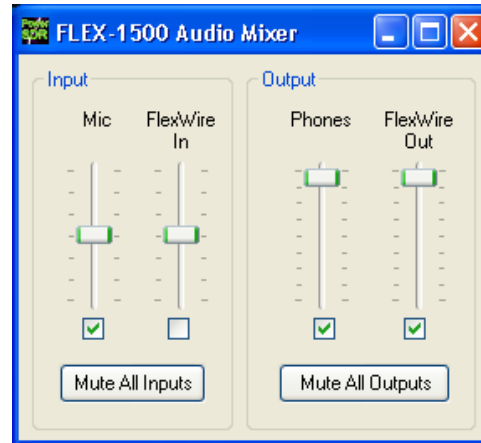
You will then be informed that the Wizard is finished. Click **Finish** to exit the wizard.

Do not click the **Start** button just yet.

B: Configure the FLEX-1500 Audio Mixer

Your FLEX-1500 has two inputs (MIC, FlexWire In) and two outputs (Phones, FlexWire Out). The **Audio Mixer** is used to select the ones you are using and set their audio levels (just like with a sound card).

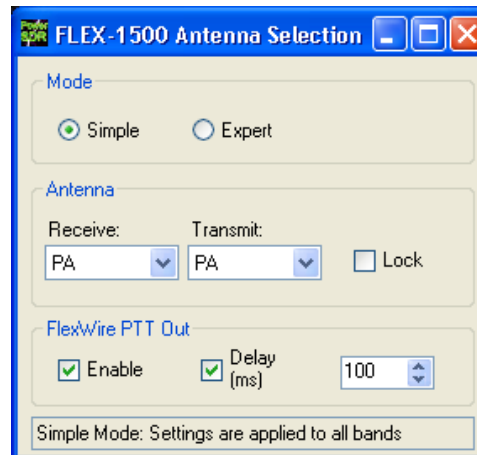
Click **Mixer** in the menu bar of PowerSDR. Check **Mic** as the Input to select the front **Mic** jack. Check **Phones** to select the front **Phones** jack.



Click the red **X** at the top right to close.

C: Configure the Antenna Selector

Click **Antenna** in the menu bar of PowerSDR to open the Antenna Selection window. Set the **Receive** and **Transmit Antenna** both to **PA**.



Click the red **X** at the top right to close.

D: Click Start

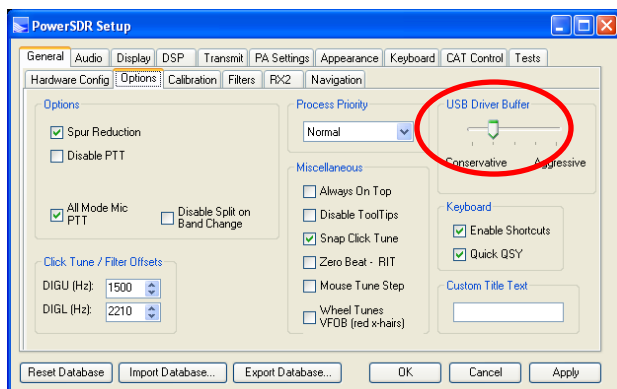
Congratulations! You've now completed all the steps required to set up your FLEX-1500. In PowerSDR, click the **Start** button at the top left to operate your FLEX-1500.

[Continued on next page]

Step 4: Configure PowerSDR

E: (OPTIONAL) Configure USB Driver Buffer control

The USB Driver Buffer control allows optimization of the low level USB stream. This control is found on the Setup/General/Options form as seen below. Note that PowerSDR must be in standby in order to change this control. The default setting has been chosen to allow successful startup of PowerSDR on most machines but may not provide optimal performance on your specific PC. More aggressive settings reduce latency and improve keying performance in CW. More conservative settings will allow lower performing USB controllers and/or CPUs to function smoothly. Choose the most aggressive setting that provides stable operation without popping or distortion of the received signal.



Refer to your owner's manual or our online Knowledge Center for helpful hints and troubleshooting guides. (<http://kc.flexradio.com>)

"CE" marked devices meet the essential requirements of Directive 1999/5/EC.



The exclamation point warning symbol means that the system is to be operated in a non-harmonized frequency band and / or according to the laws of the telecommunications authority in the country of use.

Please ensure that you have acquired the device for the use of land approved operation, and that the respective national frequency allocations are respected. See also the warning on page 2 of this guide.

Waste Disposal

The device may not be disposed of with household waste! This device complies with EU Directive on Electronic and electrical equipment (WEEE regulation) and will therefore not be disposed of with household waste. Dispose of the device to your local collection points for electronic equipment!



European Union Declaration of Conformity

FLEX-1500 Amateur Radio Transceiver Series

According to Radio and Telecommunication Terminal Equipment Directive, (R&TTE) 1999/5/EC – using the Standards:

EN 301 489-1 v1.8.1 (2008-04)
EN 301 489-15 v1.2.1 (2002-08)
EN 301 783-1 v1.1.1 (2000-09)
EN 301 783-2 v1.2.1 (2010-04)
EN 60950-1 : 2001

TYPE OF EQUIPMENT: Base Station

EQUIPMENT CLASS: B

WE, THE UNDERSIGNED HEREBY DECLARE THAT THE EQUIPMENT SPECIFIED ABOVE CONFORMS TO THE ABOVE STANDARDS.

FlexRadio Systems Date of testing: May 3, 2010

FlexRadio Systems
13091 Pond Springs Road, Suite 250
Austin, TX 78729

Person Responsible: Gerald Youngblood (Signature on file)