

# **FlexRadio Systems**

Software Defined Radios



# **FLEX-3000**<sup>TM</sup>

## **Quick Start Guide**

**Version 1.18.0**

# Introduction

Thank you for choosing the FlexRadio Systems® FLEX-3000™ transceiver. The FLEX-3000 is a highly versatile, (mobile) transceiver, designed to meet many if not all of your Amateur Radio needs. And especially through PowerSDR™, the “brains” of your transceiver, it continues to (rapidly) evolve.

Although setting up the FLEX-3000 is possibly a little different than you may have experienced with a traditional transceiver, it is not necessarily more difficult, as this Quick Start Guide will hopefully demonstrate.

The Quick Start Guide is designed to get you on the air with the least most fuss. To do this, we assume a basic HF installation and do not delve into all the FLEX-3000's and PowerSDR's many possibilities. For that, we urge you to review the FLEX-3000 Owner's Manual.

To get your FLEX-3000 on the air you will need:

- The two cables and CD-ROM that came with your FLEX-3000.
- 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 25A continuous duty.
- A Windows® PC, with an IEEE 1394 (Firewire®) connection.
- 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.
- Check our website <http://www.flex-radio.com/> for our many available support options.

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

## Step 1: Hook Up the FLEX-3000™

This describes how to make all the physical connections to your FLEX-3000.

## Step 2: Install the FLEX-3000 Device Driver

This step describes how to install the FLEX-3000 Device Driver, which communicates with the transceiver through the IEEE 1394 port.

## Step 3: Install PowerSDR

This walks you through the installation of PowerSDR, the actual “brains” of your FLEX-3000. PowerSDR determines your transceiver's functionality. It also offers a versatile user interface.

## Step 4: Configure the Device Driver and PowerSDR

This step describes first how to configure the FLEX-3000 Device Driver, then set PowerSDR to match the Driver's settings. The Device Driver has 3 parameters which you set to enable it to communicate correctly with your FLEX-3000. Finally the Mixer is set to select the correct audio input and output ports.

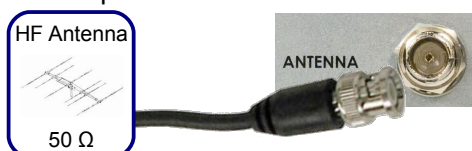
# Step 1: Hook Up the FLEX-3000™

In Step 1 you will make all the physical connections required for basic HF operation of the FLEX-3000.

## Back Panel

### A: Antenna

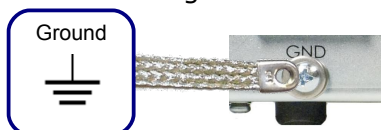
Connect an HF antenna with a 50 Ohm impedance or a dummy load to the BNC antenna port marked **ANTENNA**.



Alternatively, you may use the internal Antenna Tuner to match the impedance to 50 Ohm (see the Owner's Manual)

### B: Ground

Connect the terminal marked **GND** to your central station ground.



### C: Speakers

Connect a powered speaker, e.g. a pair of computer speakers, to the jack marked **PWR SPKR OUT** using a 1/8" stereo plug.

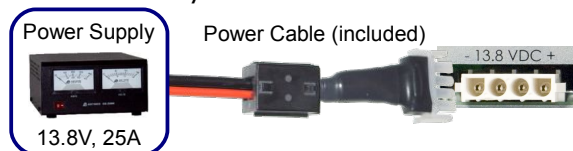


Alternatively, connect headphones to the Front Panel **Phones** jack.

### D: Power Supply

Use the power supply cable that came with your transceiver to hook up a stabilized 13.8V DC power supply to the jack marked **- 13.8 VDC +**.

The power supply must be rated for 25A continuous duty.



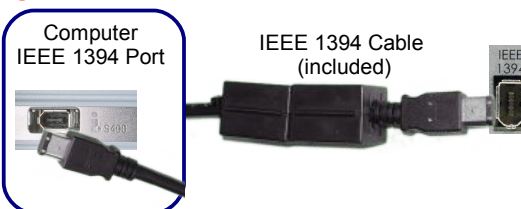
The power cable is unterminated at one end to allow you to attach your own connector(s) if needed. Make sure the 2 red wires go to the positive and the 2 black wires to the negative terminal of your power supply.

## DO NOT POWER UP THE TRANSCEIVER AT THIS TIME.

### E: IEEE 1394

Locate the IEEE 1394 (FireWire®) cable that came with your transceiver. Connect the end with the ferrite core(s) to the jack marked **IEEE 1394**. Connect the other end to the IEEE 1394 jack on your computer. The plugs should insert easily with no extra force.

## DO NOT INSERT THE PLUGS UPSIDE DOWN.



## Front Panel

### F: Paddles/Keyer/Key

Connect your CW paddles, keyer or straight key to the jack marked **KEY** using a 1/4" 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.

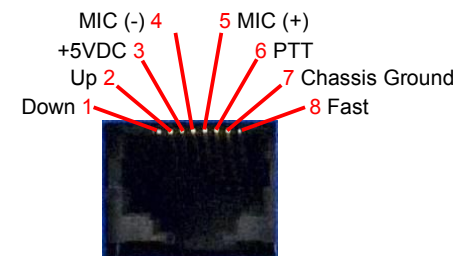
The PowerSDR Keyer is configured for iambic paddles by default. To change this, please see the FLEX-3000 Owner's Manual.

### G: Microphone/PTT

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



The pin-out of the microphone jack is as follows:



**Proceed to Step 2: Install the FLEX-3000 Device Driver on the next page.**

## Step 2: Install the FLEX-3000 Device Driver

In Step 2 you will Install the FLEX-3000 Device Driver

### A: Run the Device Driver Installation Wizard

Insert the CD-ROM that came with your FLEX-3000. The Device Driver installer file can be found in the **Driver** folder.

Alternatively, the Device Driver can be downloaded from the home page of the FlexRadio website:

<http://www.flex-radio.com/>

Double click the installer file to run the Device Driver installation wizard. You will see the following 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.



Finally, click **Finish** to restart your computer.

### B: Complete 3 times the Found New Hardware Wizard

After your computer has restarted, power up your FLEX-3000: press and latch the **Power** button. After a brief moment, you will hear the power relay click and the **Power** button will light up blue.

Your computer will now detect the FLEX-3000 and display the **Found New Hardware Wizard**, first for the Flex-3000, then for FlexRadio MIDI and finally for FlexRadio Audio. In all three cases a welcome screen will show. Of the three options, select the bottom one **No, not at this time** and click **Next**.

The Wizard will recognize that you are trying to install a FlexRadio FLEX-3000 (or MIDI, or Audio). Select the option **Install software automatically (Recommended)** and Click **Next**.



The Wizard will then request you to please wait while it installs the software. If a Hardware Installation warning appears, click **Continue Anyway** to proceed.

The Wizard will then finally display a screen informing you it has finished installing the software. Click **Finish** to continue.

**Proceed to Step 3: Install PowerSDR on the next page.**



# Step 3: Install PowerSDR

In Step 3 you will Install PowerSDR

## A: Run the PowerSDR Installation Wizard

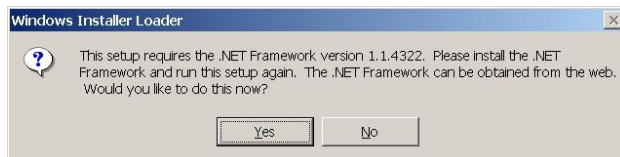
Insert the CD-ROM that came with your FLEX-3000. The PowerSDR set-up.exe file can be found in the **PowerSDR** folder.

Alternatively, PowerSDR can be downloaded from the home page of the FlexRadio website:

<http://www.flex-radio.com/>

Double click the setup.exe file to run the PowerSDR set-up wizard. You will see the PowerSDR **Welcome** screen.

If instead you see the following screen:



you will first need to install .Net 1.1 on your computer. Information can on how to do this can be found on our website at:

<http://kc.flex-radio.com/KnowledgebaseArticle50072.aspx>

You will also need the .Net 1.1 Service Pack 1. See:

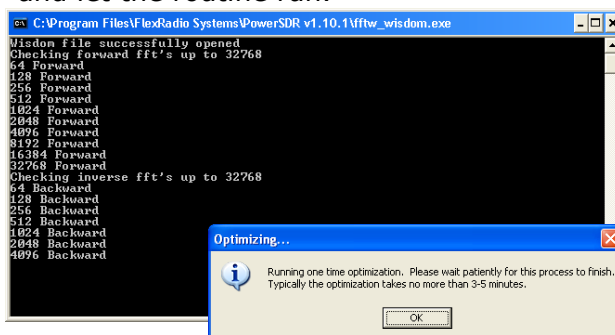
<http://kc.flex-radio.com/KnowledgebaseArticle50073.aspx>

Click **Next** on this and subsequent screens, accepting the License Agreement and all defaults. PowerSDR will be installed on your computer, after which an **Installation Complete** screen will appear. Click **Close** to complete the installation.

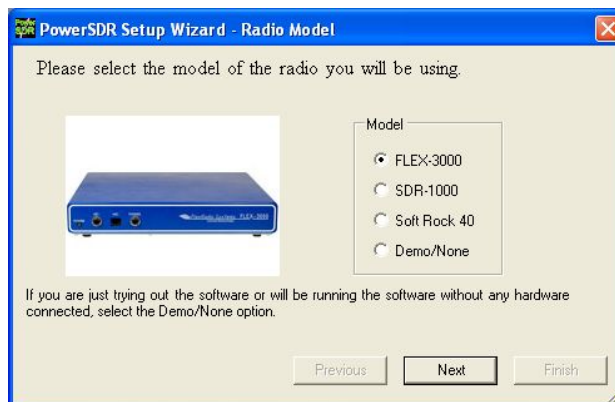
## B: Run the PowerSDR Setup Wizard

Make sure your FLEX-3000 is powered up and run PowerSDR, either by double-clicking on the desktop icon you created during installation, or clicking on **Start**, then **All Programs, PowerSDR** and select the **PowerSDR version** you just installed (if this is not the first time you have installed PowerSDR, you may have multiple versions on your computer).

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



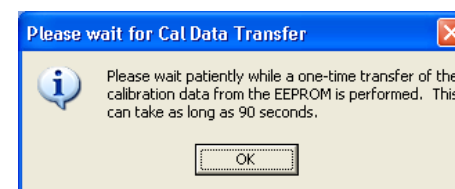
Next the PowerSDR Setup Wizard will start and a Mobile Warning screen will open. Click **Continue**.



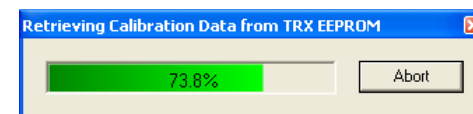
You will be asked to select your **Radio Model**. Select **FLEX-3000** and click **Next**.

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

PowerSDR next transfers your FLEX-3000's calibration data to the computer. This only happens once, the first time you run a new release of PowerSDR.



Click **OK** to start the transfer process.



When the transfer process is complete, PowerSDR will finish starting up and display its front console.

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

**Proceed to Step 4: Configure the Device Driver and PowerSDR on the next page.**

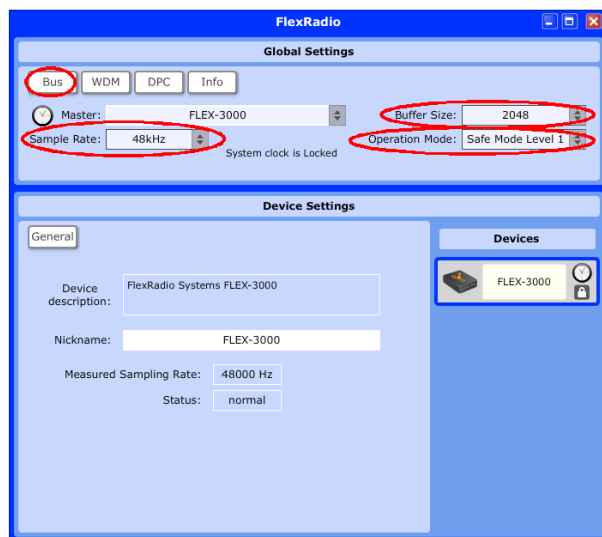
## Step 4: Configure the Device Driver and PowerSDR

In Step 4 you will first configure the Device Driver's **Sample Rate**, **Buffer Size** and **Operation Mode**. Then you will match PowerSDR's **Buffer Size** and **Sample Rate**. Finally you will configure the Mixer.

### A: Configure the Driver

Locate the Device Driver icon on your desktop and double-click on it to open the Control Panel.

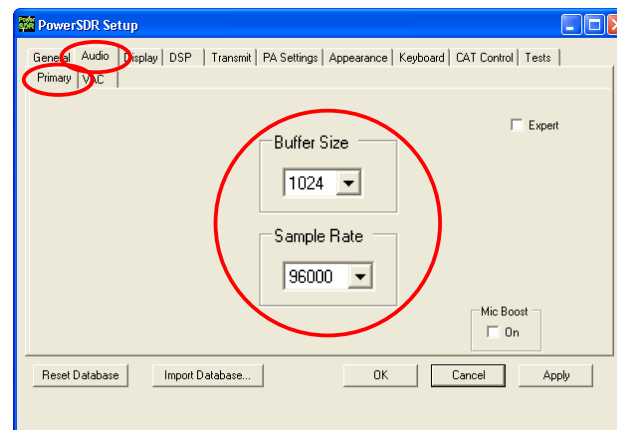
If you did not elect to create a desktop icon during installation, click on **Start**, then **All Programs**, select the **FlexRadio** folder and double-click on the **FlexRadio** application.



In the top section, click the **Bus** button on the left. Set the **Sample Rate** to **96kHz** and the **Buffer Size** to **1024**. Remember these settings as you will need them in Step 5-A. Finally, set the **Operation Mode** to **Safe Mode Level 1**.

### B: Configure the Audio Parameters

PowerSDR's Audio Parameters (Sample Rate and Buffer Size) must be configured to match those of the Device Driver (see Step A). To do so, click **Setup** in the menu bar of PowerSDR to open the Setup Form. Select the **Audio** tab and then select the **Primary** tab.



Set the **Buffer Size** to **1024** and the **Sample Rate** to **96000** (the same values you set for the Device Driver in Step A).

Click **OK** at the bottom right to complete the settings.

### C: Configure the FLEX-3000 Audio Mixer

Your FLEX-3000 has two inputs (MIC, FlexWire In) and 3 outputs (Speaker, 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 **Microphone** jack. Check **Pow Spkr Line Out** as the Output, to select your powered speakers. Check **Head Phones** if you instead (or simultaneously) want to send audio to the front **Phones** jack.

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-3000. In PowerSDR, click the **Start** button at the top left to start operating your FLEX-3000.

**This Quick Start Guide provides only the basic steps to set up your FLEX-3000. For more information, you are referred to the FLEX-3000 Owner's Manual, which can be found in the Docs folder on the CD-ROM that came with your transceiver.**