FlexRadio Systems®
Software Defined Radios

Tune In Excitement!™

# FLEX-5000A™

## HF-6m Transceiver

FLEX-VU5K VHF/UHF Module Version

# Quick Start Guide

***Version 2.3***

www.flexradio.com
sales@flexradio.com ***512-535-4713***

©2008-2011. All rights reserved. FlexRadio Systems is a registered trademark. Flex-5000A and Tune in Excitement! are trademarks of FlexRadio Systems. Specifications are subject to change without notice. Personal computer and monitor required but not included.

# Important Notice – Read Before Operating The Unit

**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 Installation 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.

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

If you have any questions due to misunderstanding, translation errors and alike please refer to the Owner's Manual first. Please contact the appropriate party for further information:

© 2008-2011 FlexRadio Systems

# 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-5000 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.


© 2008-2011 FlexRadio Systems

# Introduction

Thank you for choosing the FlexRadio Systems® FLEX-5000A/VU5K™ transceiver. The FLEX-5000A is a highly versatile transceiver, designed to meet your demanding Amateur Radio needs. The FLEX-5000 transceiver, powered by our World Famous PowerSDR™ operating software, creates the perfect Software Defined Radio environment.

Although setting up the FLEX-5000A 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-5000A's and PowerSDR's many possibilities. For that, we urge you to review the FLEX-5000 Owner's Manual.

To get your FLEX-5000A on the air you will need:

- The two cables and CD-ROM that came with your FLEX-5000A.
- 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.

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

## Step 1: Hook Up the FLEX-

Make the physical connections to your FLEX-5000A

## Step 2: Install PowerSDR™

Install the PowerSDR software.

## Step 3: Power-Up the FLEX-

Power-up your FLEX-5000A to complete driver installation.

## Step 4: Configure

Select the correct audio input and output ports using PowerSDR's Mixer and select the correct antenna ports with the Antenna Form.

**This Quick Start Guide provides only the basic steps to set up your FLEX-5000A. For more information, you are referred to the FLEX-5000 Owner's manual, which can be found in the *Docs* folder on the CD-ROM that came with your transceiver.**

FlexRadio Systems is a registered trademark. FLEX-1500, FLEX-3000, FLEX-5000 and PowerSDR are trademarks of FlexRadio Systems. Excitement to go! is a trademark of FlexRadio Systems. All other trademarks are the property of their respective owners.



© 2008-2011 FlexRadio Systems

# Step 1: Hook Up the FLEX-5000A™

In Step 1 you will make all the physical connections required for basic HF operation of the FLEX-5000A.

## Back Panel

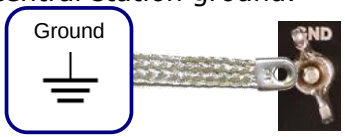
### A: Antenna

Connect an HF antenna with a 50 Ohm impedance or a dummy load to one of the 3 antenna ports marked ***ANT1***, ***ANT2***, or ***ANT3***. Remember the port you used as you will need it in Step 4-C. Connect VHF and UHF antennas to ports marked ***144MHz*** and ***430MHz***.

If you have the optional Antenna Tuner Installed, the impedance may deviate from 50 Ohm (see the Owner's Manual)

### B: Ground

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




### C: Speakers

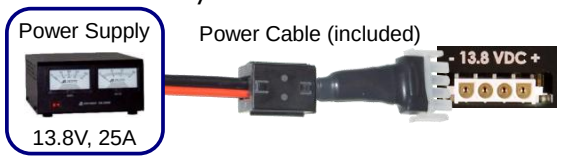
Connect a powered speaker, e.g. a pair of computer speakers, to the jack marked ***PWR.SPKR/LINE OUT*** using a 1/8" stereo plug.

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 – ***13.8V+***.

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.

**NOTE: If your power source is not current limited, you must add a 30amp fuse (not included) to the power supply cable.**

**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 one of the two jacks 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.**

### F: Paddles/Keyer/Key

Connect your CW paddles, keyer or straight key to the jack market ***KEY*** using a 1/4" stereo (TRS) plug.

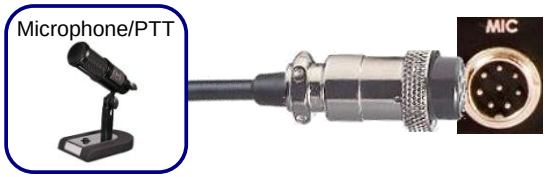
For paddles or a keyer, connect the Tip to DOT, Ring to DASH and Sleeve to common. For a straight key, connect Tip to KEY and Sleeve to common. Do not connect the Ring.

The PowerSDR Keyer is configured for iambic paddles by default. To change this, please see the FLEX-5000 Owner's manual.

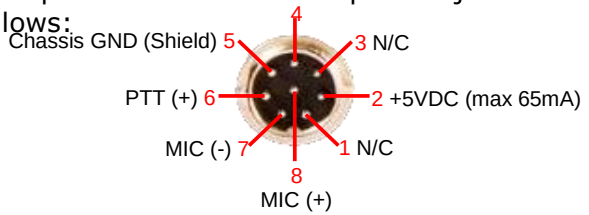
## Front Panel

### G: Microphone/PTT

Connect your microphone/PTT to the 8-pin microphone jack.




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




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



© 2008-2011 FlexRadio Systems

# Step 2: Install PowerSDR™

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

A. Collect your information.

B. Start the FlexRadio Driver Setup Wizard to install the FireWire driver.

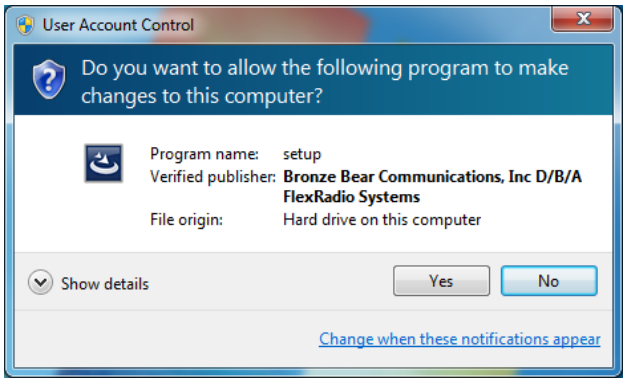
C. Install PowerSDR.

**A. Collecting Your Information**

Insert the CD-ROM that came with your FLEX-5000A and PowerSDR Setup will automatically run. Alternatively, PowerSDR Setup can be downloaded from the FlexRadio website:

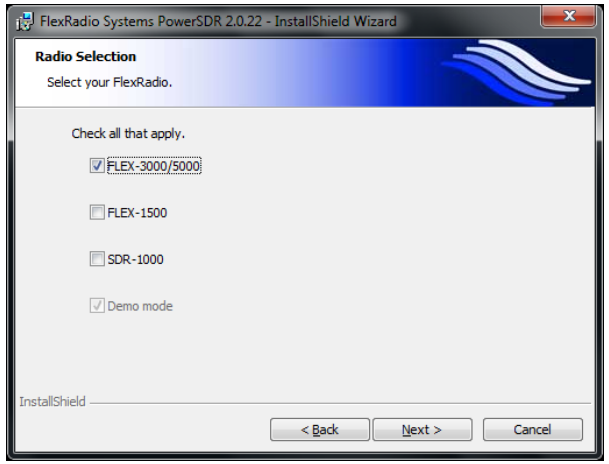
http://www.flexradio.com/

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

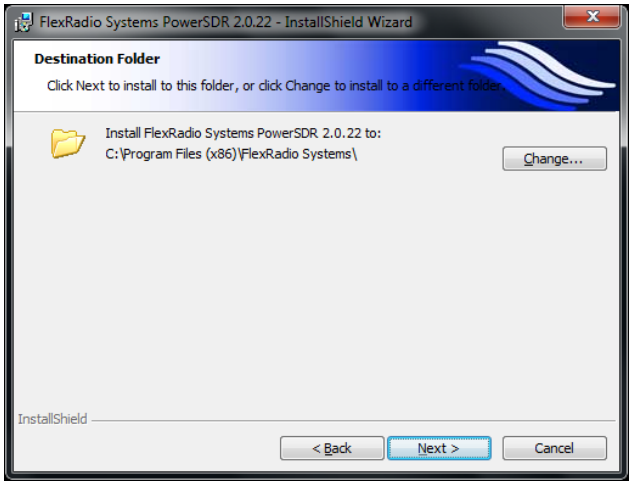



The FlexRadio Systems InstallShield Wizard will start with a welcome screen:

Click ***Next*** and then click ***I accept*** twice for the two license agreements.




Select ***FLEX-3000/5000*** as your radio type and click ***Next***.




You can change the Installation Folder location by clicking the "CHANGE…" button. Otherwise, click NEXT.

The InstallShield Wizard will now indicate that it is ready to install. Click ***Install***.



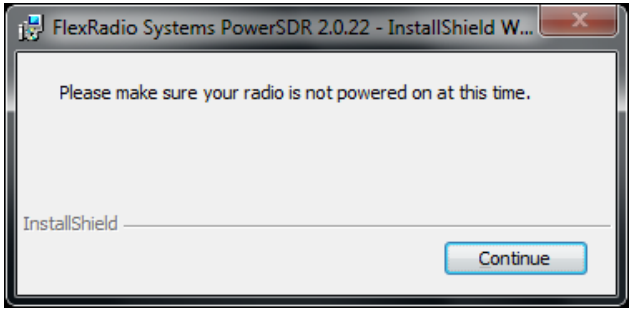
© 2008-2011 FlexRadio Systems

# Step 2: Install PowerSDR™

***Continued***

**B. Installing the FireWire Driver**

A screen will display requesting you to make sure your radio is not powered on at this time.

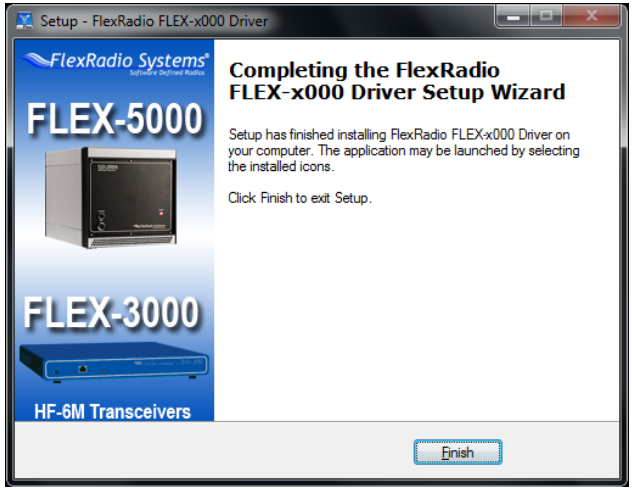



Make sure your radio is powered off and click ***Continue***.

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:

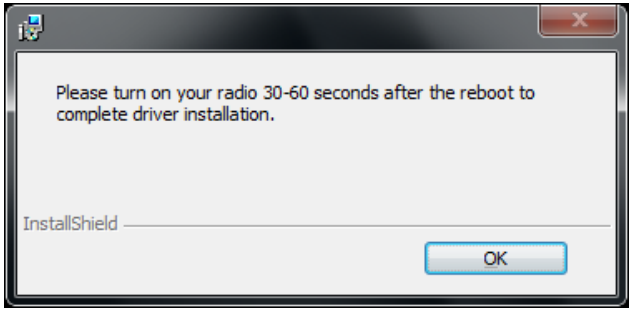



Click ***Finish*** to exit the FlexRadio Driver Setup Wizard.

**C. Installing PowerSDR**

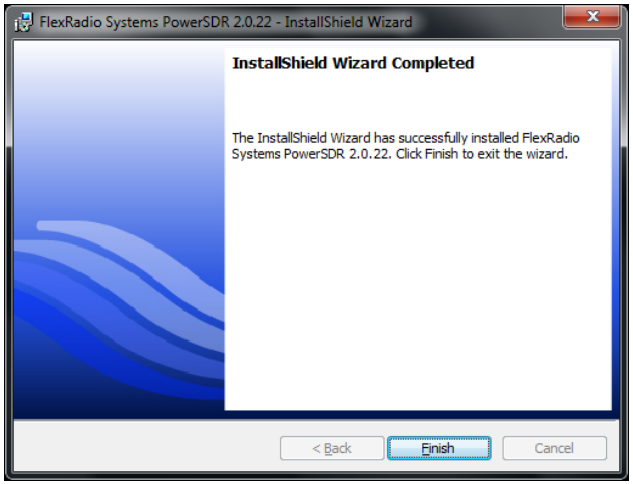
The FlexRadio Systems InstallShield Wizard will now continue by installing PowerSDR.

When completed you will see a screen requesting you to turn on your radio 30-60 seconds after restarting your computer.



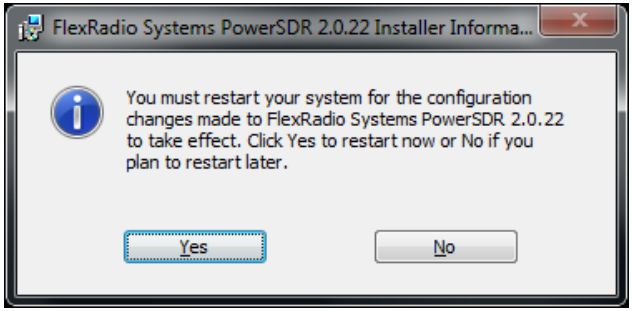

Click ***OK***.

The InstallShield Wizard will now indicate that it has completed installation.




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

You will now be instructed to restart your computer:




Click ***Yes*** to restart your computer now.

**Proceed to Step 3: Power-up the FLEX-5000A on the next page.**



© 2008-2011 FlexRadio Systems

# Step 3: Power-Up the FLEX-5000A™

In Step 3 you will power-up your FLEX-5000A to complete driver installation.

After your computer has restarted, power up your FLEX-5000A: briefly press and then release the **Power** button. After a brief moment, you will hear the power relay click and the **Power** button will illuminate.

What happens next depends on your operating system.

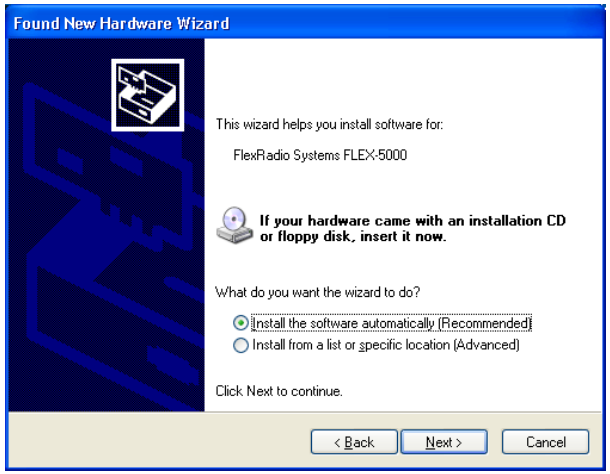
***Windows® Vista® & Windows® 7®:***

Windows will indicate that it recognizes the FLEX-5000 and load the drivers in the background. Please wait 10-30 seconds for this process to finish. To ensure driver loading is indeed complete, open the FlexRadio Driver icon on your desktop and verify that the **Device Description** is a FlexRadio Systems FLEX-5000.

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

***Windows® XP®:***

Your computer will now detect the FLEX-5000A and display the **Found New Hardware Wizard**, first for the FLEX-5000, followed by FlexRadio MIDI and then again FlexRadio MIDI. 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 you are trying to install either a FlexRadio FLEX-5000 or FlexRadio MIDI, as the case may be.

Select ***Install the 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 exit the Wizard.

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



© 2008-2011 FlexRadio Systems

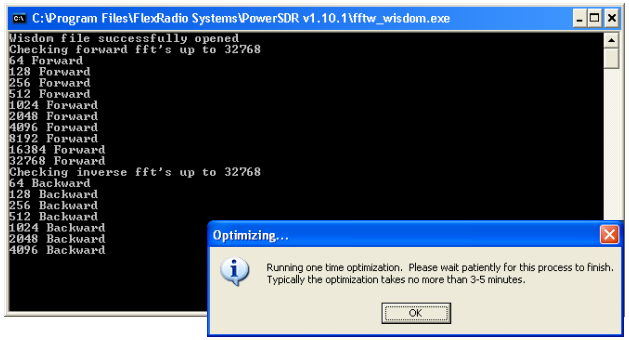
# Step 4: Configure PowerSDR™

In Step 4 you will Configure PowerSDR

**A: Run the PowerSDR Setup Wizard**
Turn on your FLEX-5000A and run PowerSDR, by double-clicking on its desktop icon

Alternatively, click on ***Start***, ***All Programs***, ***FlexRadio Systems***, ***FlexRadio Systems Software 2.n***, ***PowerSDR v2.n.n***.

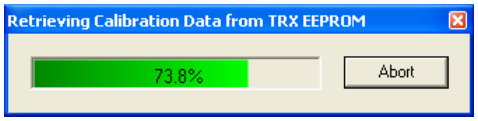
The first time PowerSDR starts up it will run an optimization routine. Click ***OK*** and let the routine run.




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.

PowerSDR next transfers your FLEX-5000A's calibration data to the computer. This only happens once, the first time you run a new release of PowerSDR.



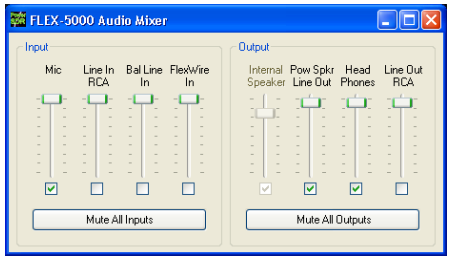

If you have the second receiver (RX2) installed, this transfer of data will be followed by a second transfer.

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

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

**B: Configure the FLEX-5000 Audio Mixer**
Your FLEX-5000A has several input and output ports. 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.

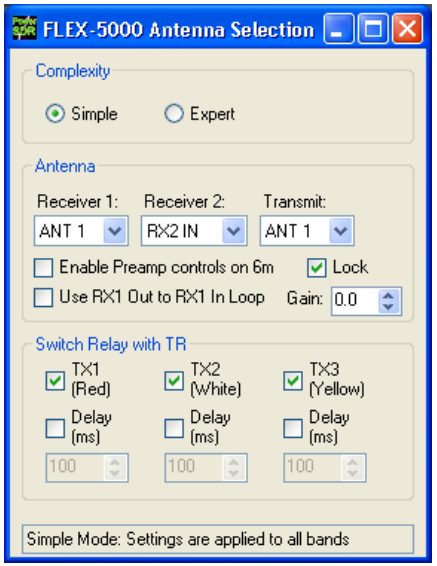



Check ***Mic*** as the Input to select the front ***Microphone*** jack. Check ***Pow Spkr Line Out*** as the Output, to select your powered speakers. Check ***Head Phones*** if you instead (or simultaneously) want to send audio to the front ***Phones*** jack.

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

**C: Configure the Antenna Selector**
Click ***Antenna*** in the menu bar of PowerSDR to open the Antenna Selector window. Set the ***Receiver 1*** and ***Transmit Antenna*** to the antenna port (***ANT1***, ***ANT2*** or ***ANT3***) you connected your HF antenna or dummy load to in Step 1-A.

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-5000A. In PowerSDR, click the ***Start*** button at the top left to operate your FLEX-5000A.

**Refer to your owner's manual or our online Knowledge Center for helpful hints and troubleshooting guides. Be sure to review the FLEX-VU5K addendum for VHF and UHF operating instructions.**


© 2008-2011 FlexRadio Systems

© 2008-2011 FlexRadio Systems