



SmartLink

SmartLink Quick Start Guide
for SmartSDR for Windows

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Version 1.4

www.flexradio.com

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Overview

SmartLink Overview

SmartLink™ provides robust and secure remote access to any FLEX-6000 series radio without the complexity of traditional approaches. SmartLink is available starting in SmartSDR version 2.0. It has been designed with three goals in mind: simplicity, security, and performance.

Simplicity: For most operators, setting up and using SmartLink will be plug and play. Simply upgrade your radio software to SmartSDR version 2 (or later), create a SmartLink account, register your radio in your SmartLink account and enjoy remote access from anywhere with Internet access.

Security: We know that keeping your data and access to your radio secure is of utmost importance. To ensure this, all communication between SmartSDR clients, radios and SmartLink servers is encrypted and authenticated using state of the art techniques.

Performance: Our goal is to provide the same level of performance with a SmartSDR SmartLink connection that operators have come to expect from SmartSDR locally.

Requirements

SmartLink requires version 2 of the SmartSDR software and setup of your FLEX-6000 series radio in its local area network prior to use. It also requires Internet access to the radio and at least 500 kbps (0.5 Mbps) upload bandwidth on the radio end and 500 kbps (0.5 Mbps) down on the remote end.



Version 2 of SmartSDR for Windows is licensed software. Most users will need to purchase a license as part of the version 2 installation process. The purchase process is described below. Limited Edition Flex 6000 Signature Series radios and Flex 6000 Signature Series radios purchased on or after May 19, 2017, are already licensed for version 2. No additional license purchase is required for these radios.

Configuring SmartLink

Obtain and Install the Software

As you have done with earlier versions of SmartSDR, download the latest version from the FlexRadio Systems web site at <http://www.flexradio.com>. Install the new version and perform any necessary PC reboots and then launch the new version.

Update the Radio

With the new software installed, it is now necessary to update the radio with the new firmware. Start SmartSDR then select the radio in the radio chooser window and press the yellow **Update** button.

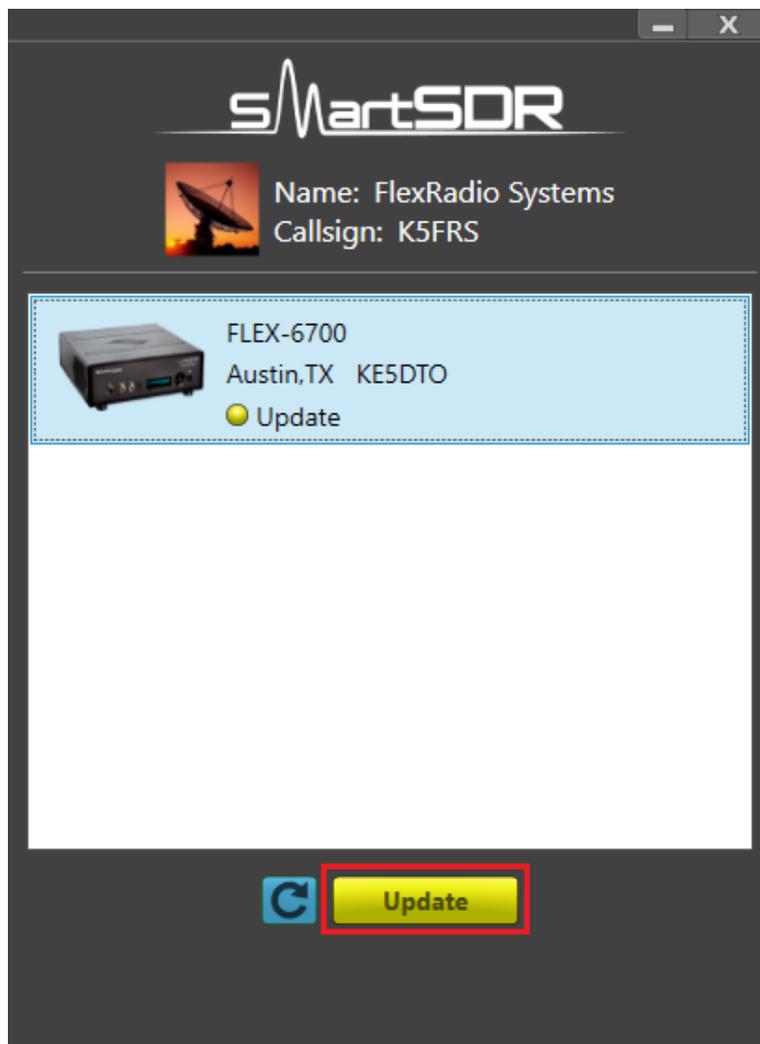


Figure 1 SmartSDR for Windows Radio Chooser - Update

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Purchase the Version 2 License

If you need to purchase a license to run Version 2 of SmartSDR for Windows, the radio status will show “License Required” and you will be presented with a **Buy** button that will launch a web browser which will take you through the steps to purchase the license.

Owners of Limited Edition radios or radios purchased with a SmartSDR version 2 license installed will not see the “License Required” indicator. Proceed to **Create the SmartLink Account** on page 5.

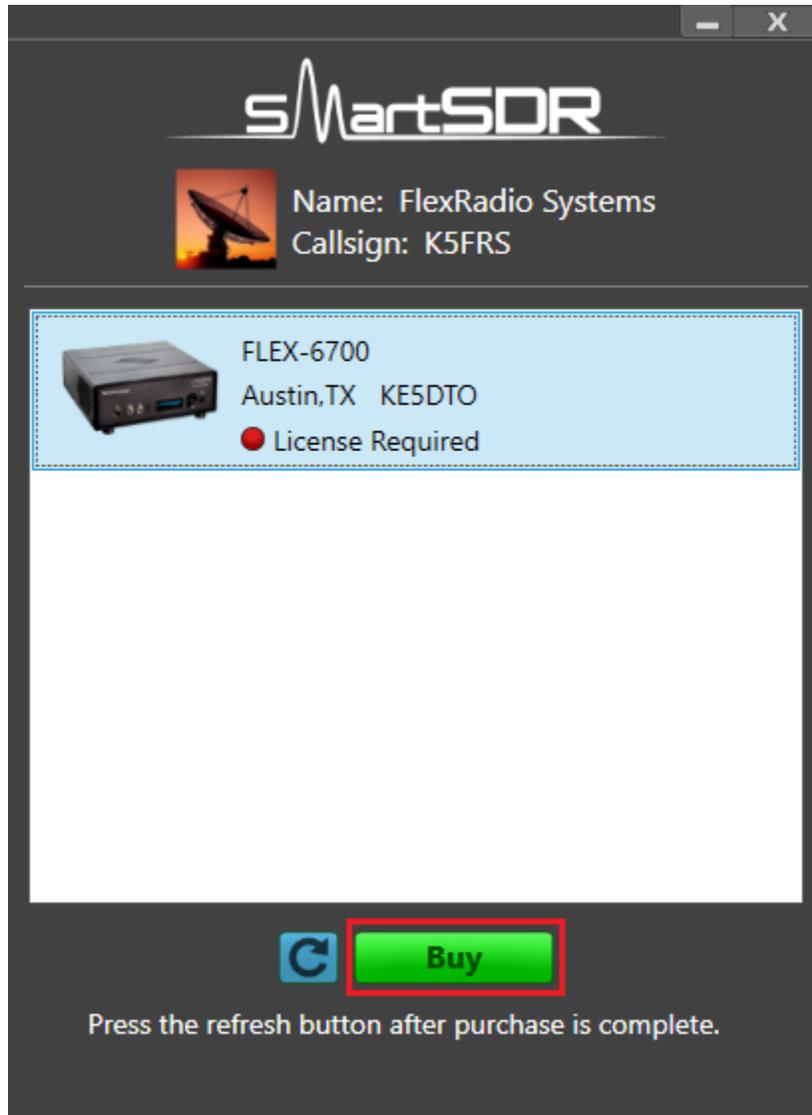


Figure 2 SmartSDR for Windows Radio Chooser - Buy

Refresh the License Info

Click the circular refresh button in the radio chooser window to update the license information for the radio. It may take up to a minute after the purchase completes before SmartSDR finds the new license.

Create the SmartLink Account

To create your SmartLink account or log into an existing account, click the blue **Log In** button near the top of the radio selection screen.

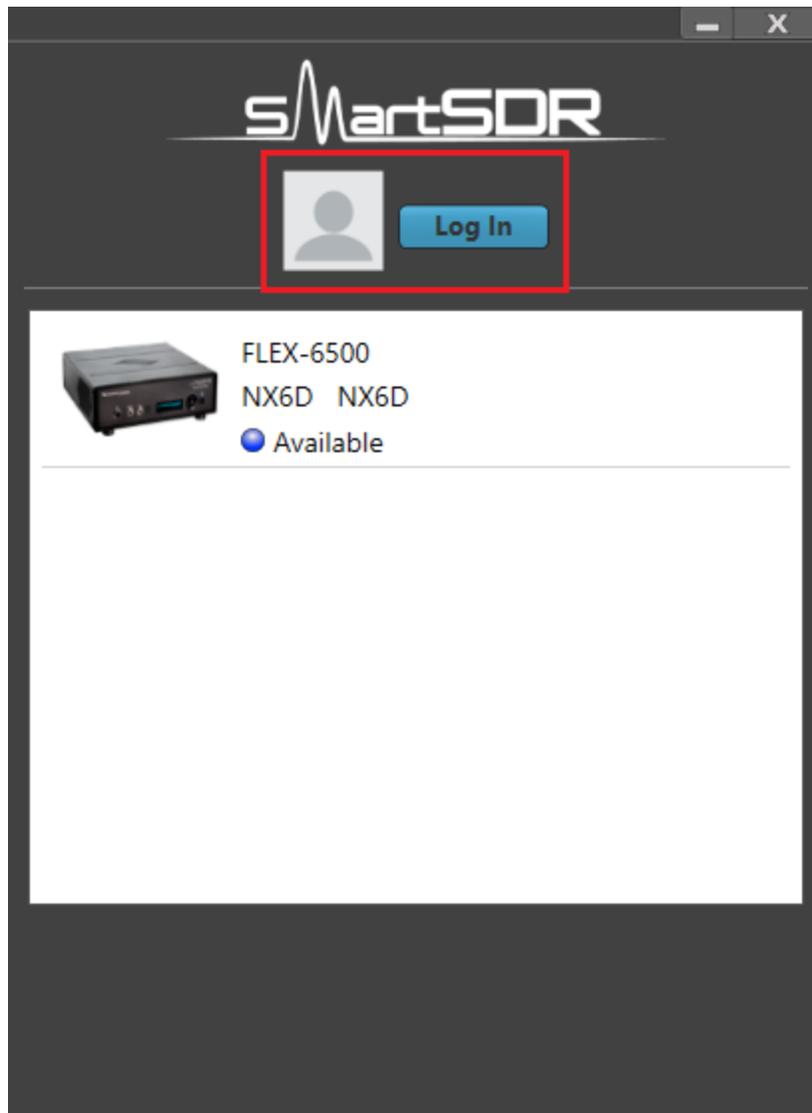


Figure 3 SmartSDR for Windows Radio Chooser – Log In

The following screen will appear. If you do not have a SmartLink account, click **Sign Up** in the **SmartLink Login** screen to create an account using either an email address and password of your choice or the credentials of an existing **Google** or **Facebook** account. Follow the instructions to create the account, then fill in the Name and Callsign fields and click the **Save** button.

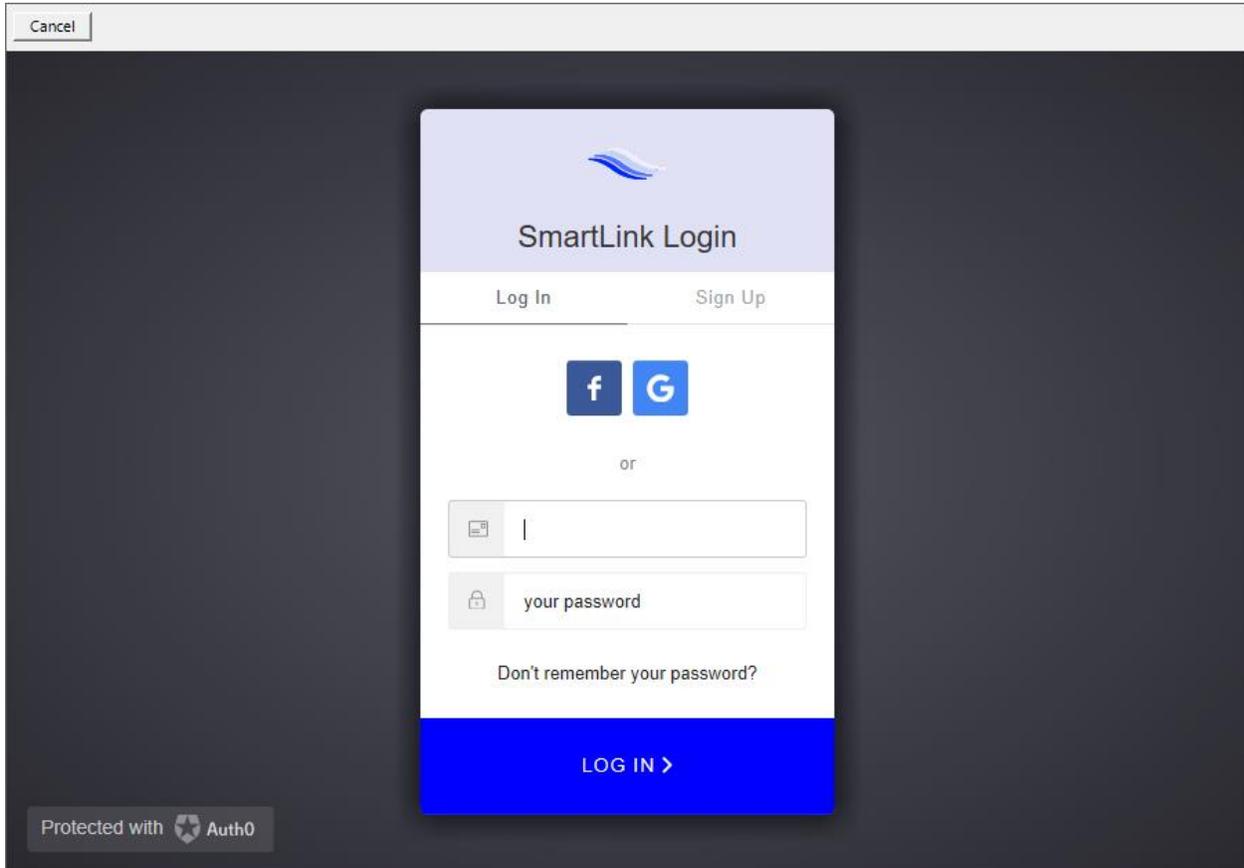


Figure 4 SmartLink Login / Sign Up

If you already have a SmartLink account, click **Log In** in the **SmartLink Login** screen and then either enter your email address and password or click the Facebook or Google button to log in using those systems.

Note that you will remain logged into your SmartLink account until you explicitly log out, even if SmartSDR is restarted.



Be careful to note which type of credentials you used to create your SmartLink account as you will need to use the same credentials to access your radio from a remote location. Using different credentials may result in your radio not showing up in your connection list when trying to connect from a remote location.

Register the Radio

With the SmartLink account created, it is time to register your radio in your account. Begin by clicking on the radio in the radio chooser. **Connect** and **SmartLink Setup** buttons will appear. Click the **SmartLink Setup** button. The following window should appear. Click the **Register** button below the account details.

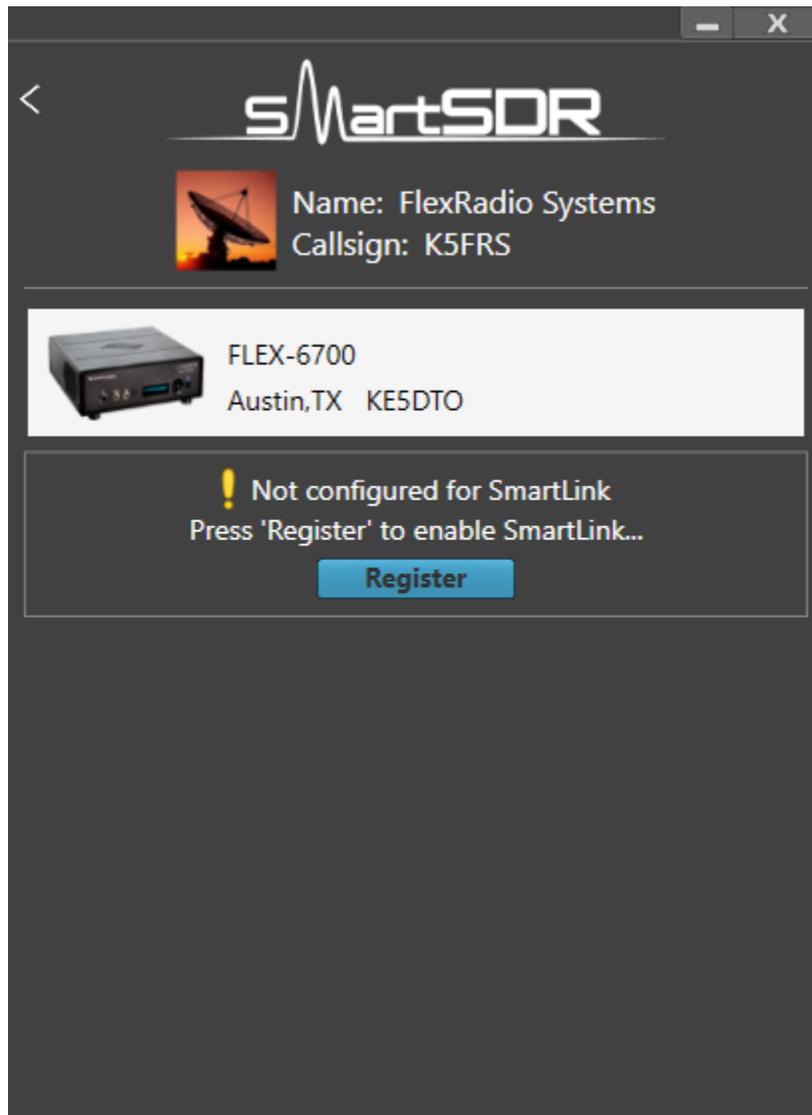


Figure 5 SmartSDR for Windows - Radio Registration

After a brief period to establish a secure connection, a prompt to key the radio will be shown.

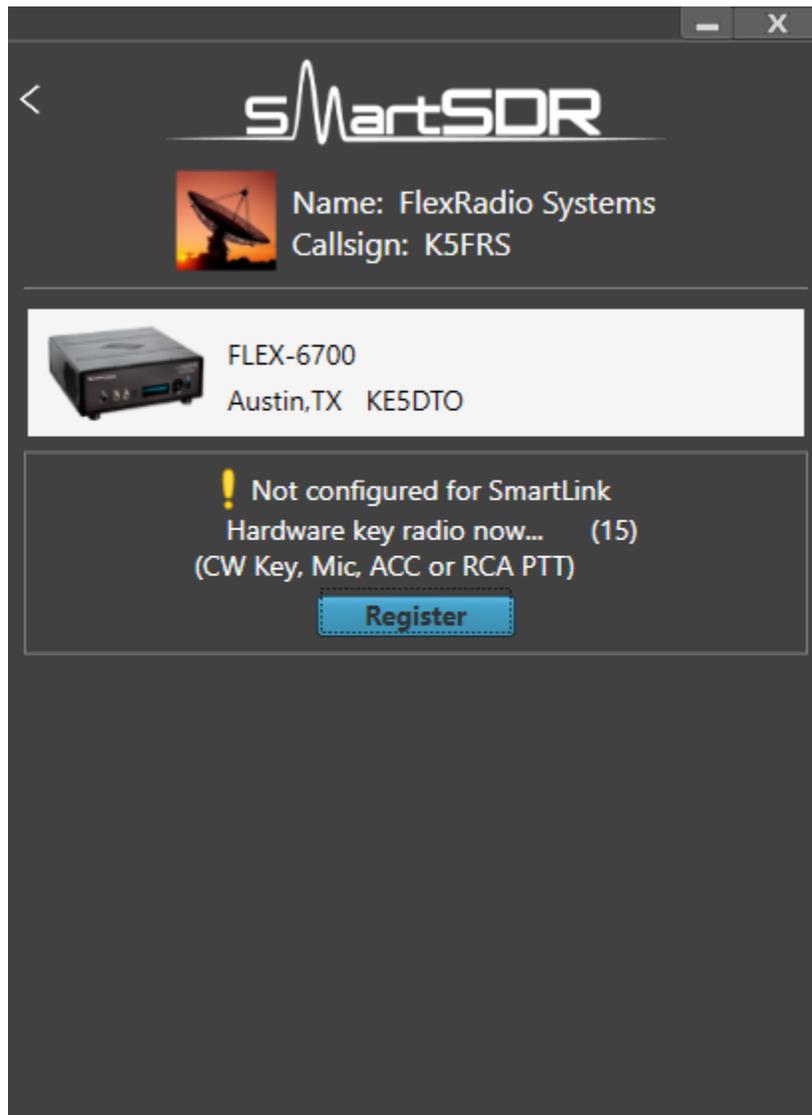


Figure 6 SmartSDR for Windows - Radio PTT

At this point, use a Hand Mic, CW Paddles, or an RCA PTT input to key the radio. This cannot be done via the Maestro MOX button or any remote keying input. This process ensures that you the radio owner, having physical access to the radio, authorize it to be associated with your SmartLink account. Similar measures are required should you need to unregister your radio from the SmartLink account.



You will not be able to connect to the radio from a remote network until this step is successfully completed.

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When the radio is registered, the display will update to indicate the registered status as shown below.

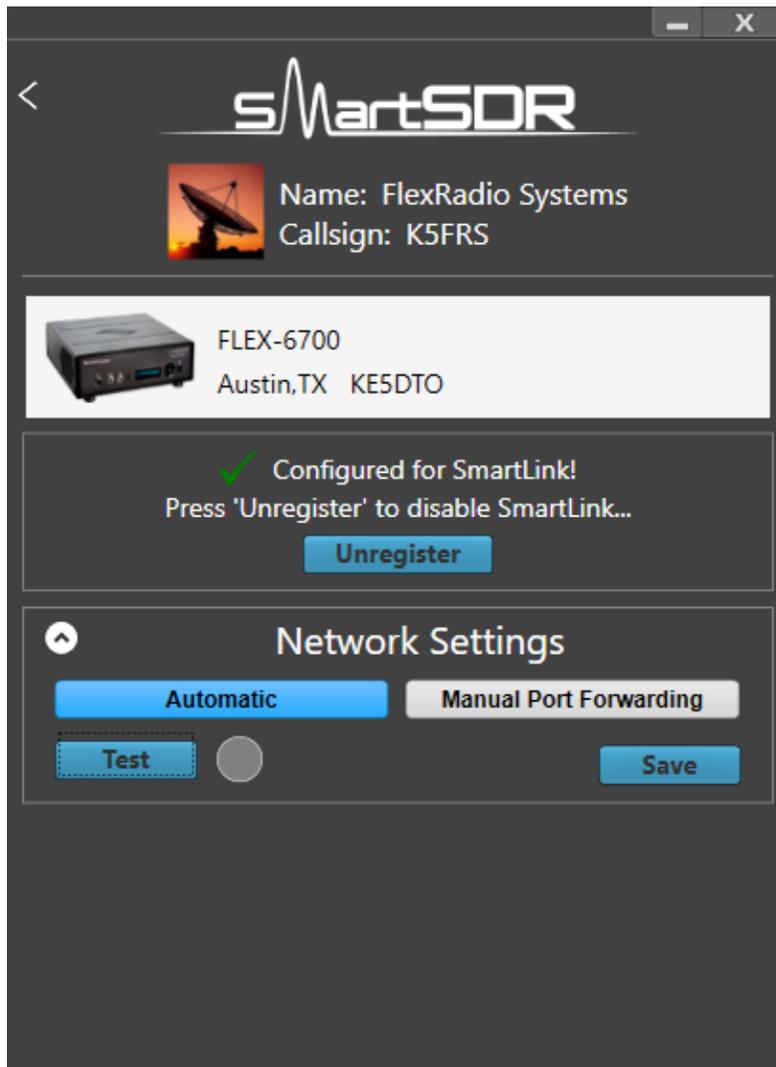


Figure 7 SmartSDR for Windows - Radio Registered

Test the SmartLink Connection

At this point, it is a good idea to test the SmartLink connection while you are still local to the radio. Open the **Network Settings** window as shown above and select **Automatic** mode. Click the **Test** button. If the indicator turns green, SmartLink configuration for your radio is complete. Hovering the mouse cursor over the green result indicator will display a test summary.

Automatic mode should work for most networks. If it doesn't, it may be necessary to enable UPnP (Universal Plug n Play) on your network or to manually forward ports in your router. See **SmartLink Troubleshooting** on page 11 for details about these procedures and for resolving **Test** button failures.

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Connect to Your Radio

Now that your radio is registered in SmartLink and your connection is verified, connecting to your radio can be done from any client that supports SmartLink including SmartSDR for Windows, Maestro, and SmartSDR for iOS from anywhere in the world, through an Internet connection. At the remote location make sure to sign into SmartLink using the same credentials you used to create your SmartLink account and to register your radio. A blue SmartLink icon will show up on any radio to which you have access through SmartLink.



Note that local connections do not utilize the SmartLink server, but instead connect directly to the radio as in earlier versions of SmartSDR. When connecting to a radio through a local connection, the blue SmartLink icon will not appear in the SmartSDR display.

SmartLink Troubleshooting

I'm trying to connect to my radio from a remote location. Where is my radio? I don't see it in my list.

Here are some things to consider:

- Is the radio powered up?
- Does the radio have an Internet connection that is functioning?
- Do you have a functioning Internet connection at the remote location?
- Did you Log In to SmartLink at the remote location with the same account that you used to register your radio?

My radio shows up in the list, but when I try to connect, it doesn't work.

The first step in diagnosing a remote connection problem is to run the test included in the SmartLink Setup -> Network Settings screen. See **Test the SmartLink Connection** on page 9. If the test passes (green), there shouldn't be a problem connecting to the radio.

I purchased a license, but it doesn't show up in the radio.

If you have SmartSDR Version 2 running on your computer and your radio, and you purchased or are entitled to a Version 2 license but you continue to see the "License Required" message, this issue cannot be resolved by reinstalling any software.

A common cause of this problem is isolation of the radio from the Internet. The radio must be able to contact the SmartLink server through the Internet to find and install the license. This step is done by the radio's firmware, not by the SmartSDR software running in a computer or in Maestro. The most common reason for the radio being isolated from the Internet is connecting the radio directly to the computer running SmartSDR with an ethernet wire. This configuration creates a "link-local" connection between the computer and the radio, which works fine for everyday use by SmartSDR, but it does not support Internet communication for the radio. The radio will not be able to connect to the SmartLink server and install the license.

A simple solution is to disconnect the radio from the computer and reconnect the radio's ethernet wire directly to the local area network (LAN) router. Turn the radio on, and leave it for a minute, turn it off and return the radio to its original location and wiring. The license should be installed.

If attaching the radio directly to the LAN is not a practical solution, and if the computer is connected to the Internet through a second network interface (usually a Wi-Fi connection to the LAN) another solution is to bridge the two network interfaces together in the computer so that the radio becomes part of the LAN. Instructions for doing this can be found at this [HelpDesk Article](#). After making the changes described in the article and rebooting the computer and the radio, the radio should find and install the license within a few minutes.

If these suggestions don't solve the problem, open a HelpDesk support ticket, as described below.

Running the Network Settings Test, I do not get a green response.

A yellow test result means that a remote connection might work depending on the configuration of the network at the remote end. Remote connections may work from some locations and not others. A red test result means that the connection will not work with the current configuration on the radio network. Hover the mouse cursor over the red result indicator to open a window containing details about the test failure. These details may help you to understand how to correct the problem. Take note of the details in case you need to open a Help Desk support ticket, as described at the end of this section.

To avoid connection issues and obtain a good test result (green), enable UPnP (Universal Plug n Play) on your router if it is supported or use the Manual Port Forwarding option (see below).

My router doesn't support UPnP. How can I setup my radio to reliably connect to remote clients?

For a reliable connection without UPnP, you will need to use Manual Port Forwarding. To use Manual Port Forwarding, you will need to pick one TCP port number (e.g. 4994) and one UDP port number (e.g. 4993) for SmartLink to use. Referring to **Register the Radio** starting on page 7 go to the **Network Settings** screen. Select **Manual Port Forwarding** then enter the port numbers you have chosen in the TCP and UDP Port fields. Click the **Save** button. The remainder of this procedure is done to the configuration settings of your router. Details for setting up port forwarding on a wide variety of routers is beyond the scope of this document, but this document, <https://helpdesk.flexradio.com/hc/en-us/articles/115003365503-What-is-Port-Forwarding-and-How-do-you-do-it>, should provide a good starting point. In addition to port forwarding, your radio should be assigned a Static DHCP address by the router to avoid occasional breaks in the SmartLink connection caused by changes to the radio's IP address.

When I use public Wi-Fi, sometimes my Panadapter hangs or my audio has gaps in it. How do I fix this?

As a network application, SmartLink can only perform as well as the networks to which it is connected. This means that even if your radio's Internet connection is good, connecting to it from a marginal network can impact your performance. Use the Network Health indicator on the Maestro main screen to learn if the network is the problem. As an aside, testing with 3G and LTE cell phone connection hotspots has fared well.

I'm still stuck. What can I do?

If you are unable to resolve your issue, please contact FlexRadio Systems technical support by opening a HelpDesk support ticket on-line at <https://helpdesk.flexradio.com/>. For details on how to submit a HelpDesk support ticket, please refer to the following URL: <https://helpdesk.flexradio.com/hc/en-us/articles/202118688-How-to-Submit-a-Request-for-Technical-Support>.

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Our Technical Support engineers are available Monday-Friday from 9:00am-5:30 pm Central Time. If you contact Support after business hours, on a holiday or weekend, we will respond to your request for assistance during regular business hours in the order your HelpDesk ticket was received.