

Programming Radios for FMS Offseason

When using the FMS Offseason software, the typical networking setup is to use a single access point with a single SSID and WPA key. This means that the radios should all be programmed to connect to this network, but with different IPs for each team. The Team version of the FRC Bridge Configuration Utility has an FMS-Lite mode that can be used to do this configuration.

Before you begin using the software:

1. Disable WiFi connections on your computer, as it may prevent the configuration utility from properly communicating with the bridge
2. Make sure no devices are connected to your computer via ethernet, other than the wireless bridge.

The steps below describe installing and using the FRC Bridge Configuration Utility to program radios for this network configuration. If you have a machine where you have already used this tool to program a radio for FRC 2016, skip to ["Launch the Software"](#).

Pre-Requisites

The 2016 FRC Radio Configuration Utility requires the Java Runtime Engine (JRE). If you do not have Java installed, you can download the JRE from here: <https://www.java.com/en/download/>

The FRC Radio Configuration Utility requires Administrator privileges to configure the network settings on your machine. The program should request the necessary privileges automatically (may require a password if run from a non-Administrator account), but if you are having trouble try running it from an Administrator account.

Application Notes

The 2016 Radio Kiosk will program the radio to enforce the 7Mbps bandwidth limit on traffic exiting the radio over the wireless interface. In the home configuration (AP mode) this is a total, not a per client limit. This means that streaming video to multiple clients is not recommended.

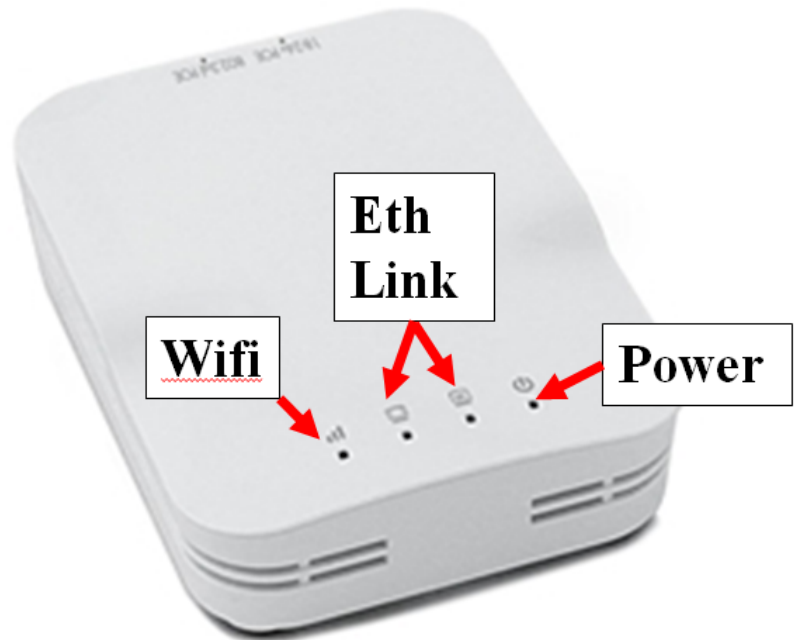
The 2016 Kiosk has been tested on Windows 7, 8 and 10. It may work on other operating systems, but has not been tested.

Programming Radios for FMS Offseason

Programmed Configuration

Power	
Blue	On or Powering up
Blue Blinking	Powering up
Eth Link	
Blue	Link Up
Blue Blinking	Traffic present
WiFi	
Red	Bridge Mode, unlinked
Yellow\Orange	Bridge Mode, Linked
Green	AP Mode
Off	Unprogrammed

WiFi light only works after radio has been power cycled.



The Radio Configuration Utility programs a number of configuration settings into the radio when run. These settings apply to the radio in all modes (including at events). These include:

- Set a static IP of 10.TE.AM.1
- Set an alternate IP on the wired side of 192.168.1.1 for future programming
- Bridge the wired ports so they may be used interchangeably
- The LED configuration noted in the graphic above
- 7Mb/s bandwidth limit on the outbound side of the wireless interface
- QoS rules for internal packet prioritization (affects internal buffer and which packets to discard if bandwidth limit is reached). These rules are Robot Control and Status (UDP 1110, 1115, 1150) >> Robot TCP & Network Tables (TCP 1735, 1740) >> Bulk (All other traffic).

When programmed with the team version of the Radio Configuration Utility, the user accounts will be left at (or set to) the firmware defaults:

- Username: root
- Password: root

Note: It is not recommended to modify the configuration manually

Programming Radios for FMS Offseason

Download the software

TeamForge

by CollabNet

Projects

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Admin

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More

pkg1105

Jump to ID

koconnor

Project Home

Trackers

Source Code

File Releases

Documents

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Discussions

Reports

Project Admin

WPILib

File Releases

FRC Radio Configuration Utility

List Releases

File Release

Summary

Packages:

Driver Station

FRC Radio Configuration Utility

Simulation

Package Details:

Package Name: FRC Radio Configuration Utility

Description: Tool to configure FRC Robot Radios.

Show Download Link in Project List: No

Edit

Releases

Filter

15 Rows

Release ID : Name	Maturity	Created On	Status	Files	Downloads	Related Tracker Artifacts	Related Planning Folders
No results found.							

Download Selected Monitor Delete Edit Add

Download the latest FRC Radio Configuration Utility Installer from the [WPILib project File Releases](#).

Install the software

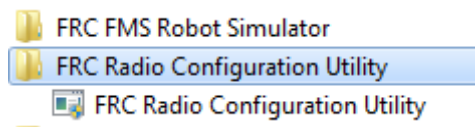
FRC_Radio_Configuration_10_8_15.exe	10/8/2015 1:50 PM	Application
FRCicon_RGB_Border.bmp	2/20/2015 1:27 PM	Bitmap Image

Double click on FRC_Radio_Configuration_MM_DD_YY.exe to launch the installer. Follow the prompts to complete the installation.

Part of the installation prompts will include installing WinPCap if it is not already present. The WinPCap installer contains a checkbox (checked by default) to start the WinPCap driver on boot. You should leave this box checked.

Programming Radios for FMS Offseason

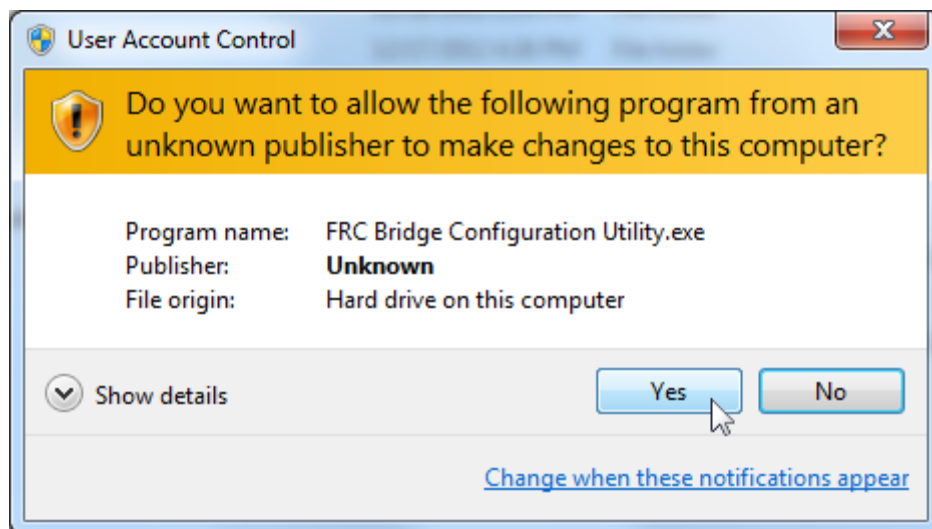
Launch the software



Use the Start menu or desktop shortcut to launch the program.

Note: If you need to locate the program it is installed to C:\Program Files (x86)\FRC Radio Configuration Utility. For 32-bit machines the path is C:\Program Files\FRC Radio Configuration Utility\

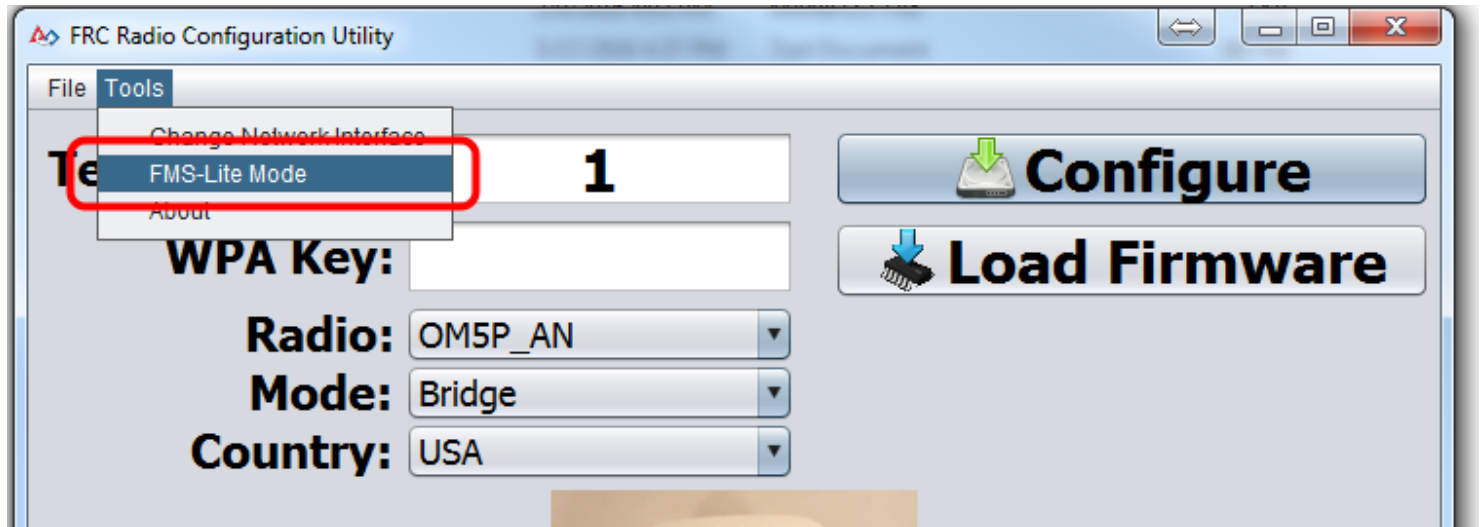
Allow the program to make changes, if prompted



If the your computer is running Windows Vista or Windows 7, a prompt may appear about allowing the configuration utility to make changes to the computer. Click "Yes" if the prompt appears.

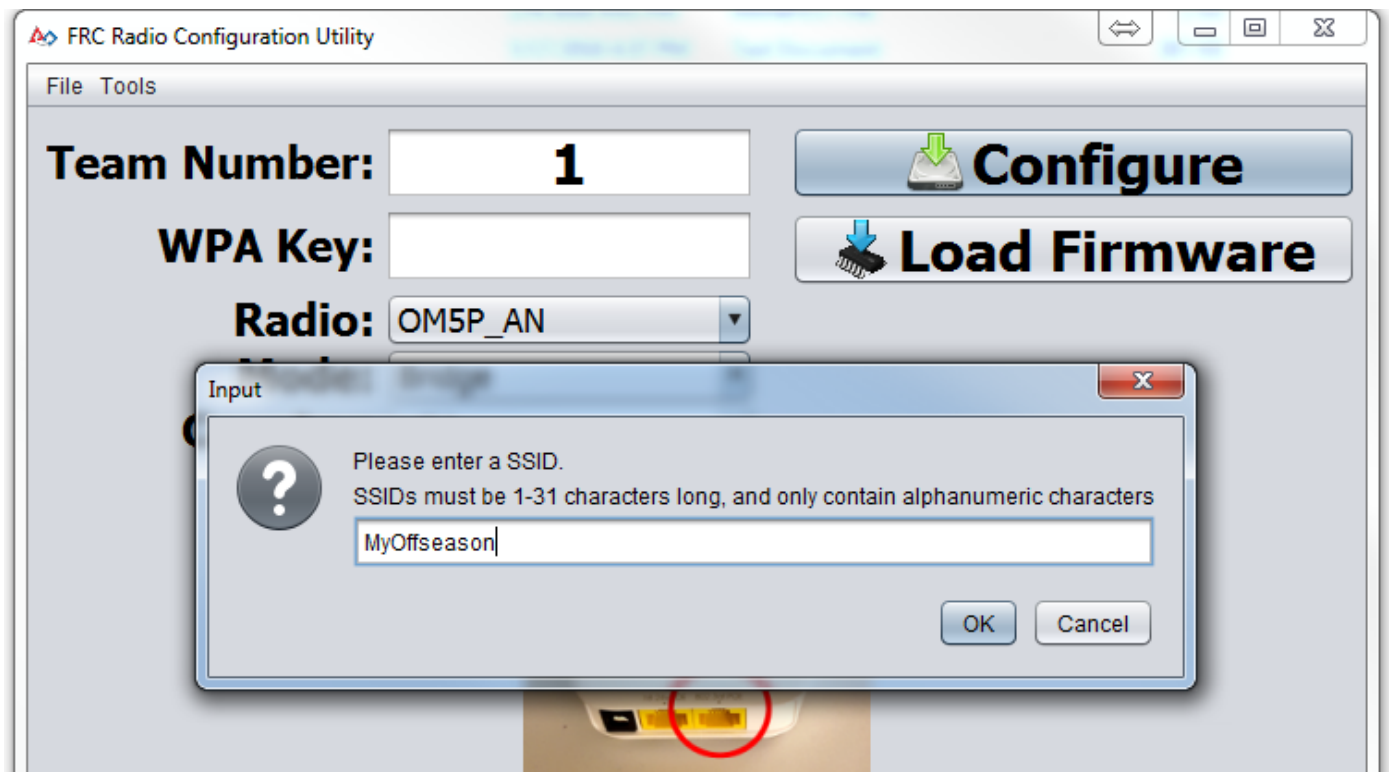
Programming Radios for FMS Offseason

Enter FMS-Lite Mode



Click Tools->FMS-Lite Mode to enter FMS-Lite Mode.

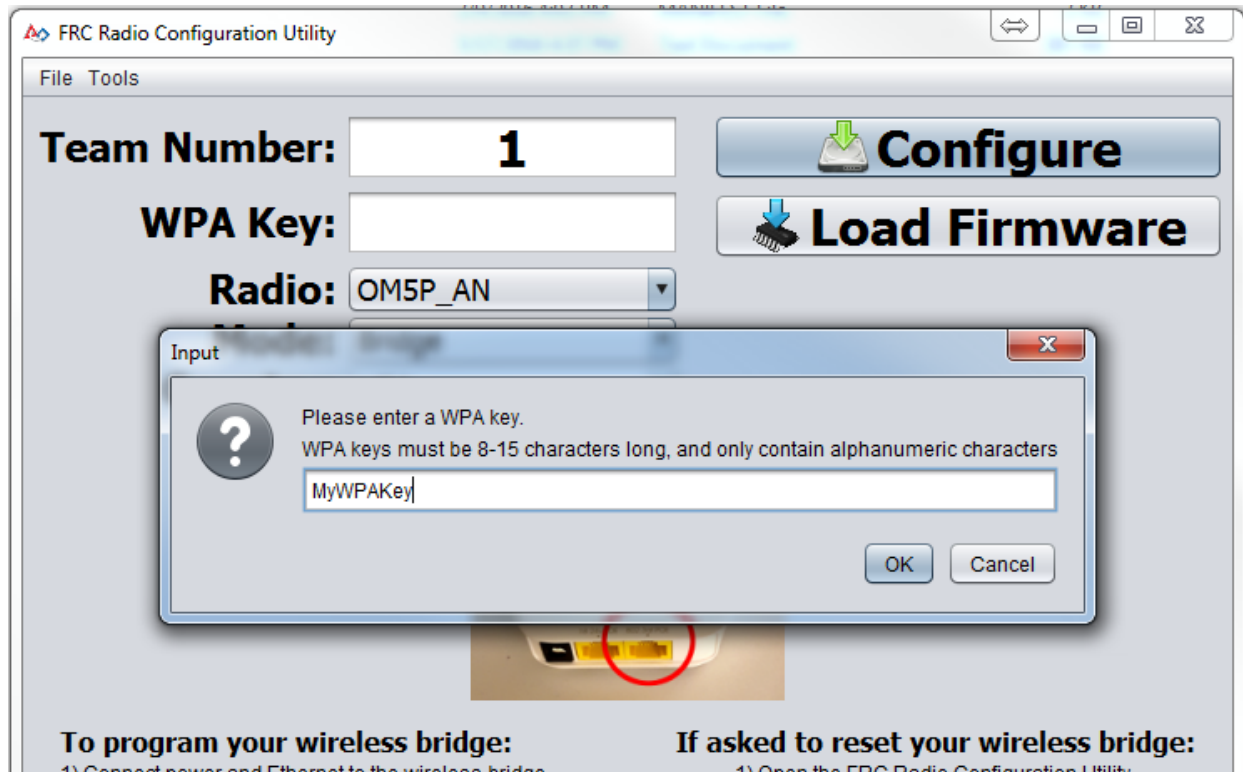
Enter SSID



Programming Radios for FMS Offseason

Enter the SSID (name) of your wireless network in the box and click OK.

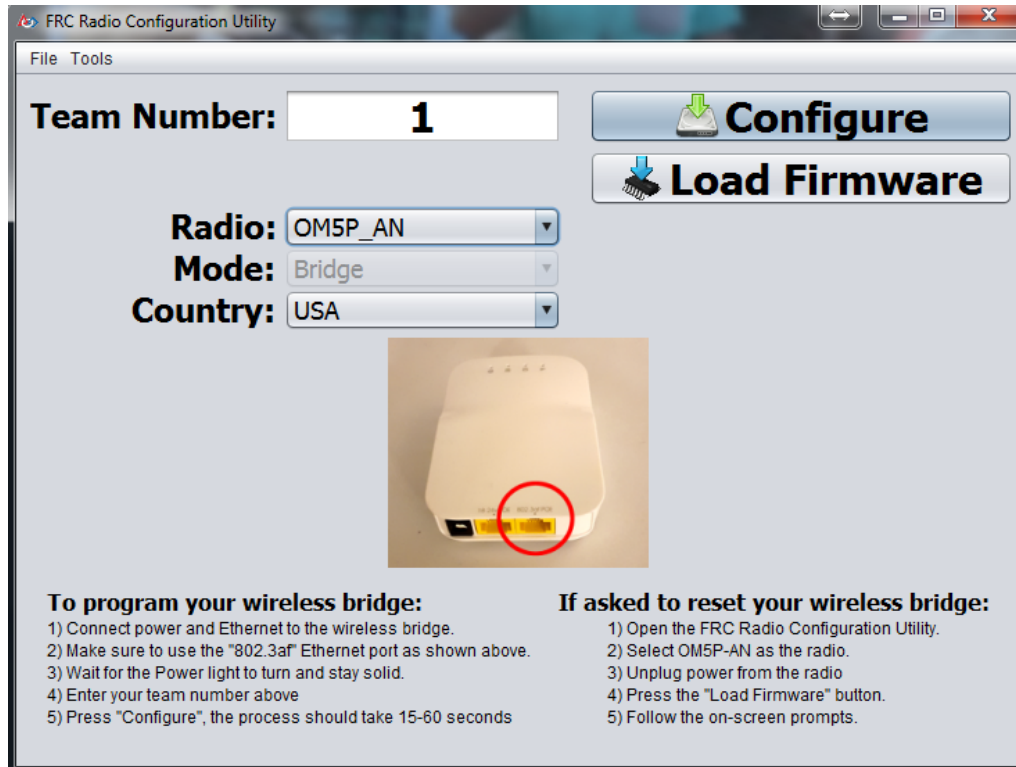
Enter WPA Key



Enter the WPA key for your network in the box and click OK. Leave the box blank if you are using an unsecured network.

Programming Radios for FMS Offseason

Program Radios



The Kiosk is now ready to program any number of radios to connect to the network entered. To program each radio, connect the radio to the Kiosk, set the Team Number in the box, and click Configure.

The kiosk will program D-Link Rev A or Rev B radios to work on an offseason FMS network by selecting the appropriate option from the "Radio" dropdown. Note: Bandwidth limitations and QoS will not be configured on the D-Link radios in this mode.

Changing SSID or Key

If you enter something incorrectly or need to change the SSID or WPA Key, go to the Tools menu and click FMS-Lite Mode to take the kiosk out of FMS-Lite Mode. When you click again to put the Kiosk back in FMS-Lite Mode, you will be re-prompted for the SSID and Key.