Demonstration site network setup

The following items are required:

1. Radio configuration software,
2. These instructions

There are three steps to take:

1. Download and install the radio configuration software
2. At the event, complete the required items for the radio configuration, and
3. At the event, complete the required items for the driver station configuration.

The last two items are detailed in this document.

The radio software is available at this site:

<https://usfirst.collab.net/sf/frs/do/listReleases/projects.wpilib/frs.frc_radio_configuration_utility>

Note: I installed the later of the two versions (dated 2/11/16) indicated at this link.

Robot radio configuration process:

Note: This will result in the radio configured into bridge mode seeking the demonstration router only.

Connect the radio directly to the laptop.

The connection must use the outer port on the radio, and should be the only connection to the radio.

Turn on the radio – probably requires turning on the robot.

To configure the radio, run the radio configuration utility – if necessary, run as administrator.

Select the ‘Local Network Connection’ and click ‘OK’

In the team box, enter the desired team number.

On the ‘Tools’ menu, select ‘FMS-Lite’

This will prompt entry of the SSID (Robodevils5) and then the WPA Key (FIRSTRobotics)

Once these are completed, click the Configure button.

The Radio Configuration should proceed.

Once configured:

turn robot power off,

reconnect the radio to the RoboRIO

boot the robot

As a suggestion, Use the admin capability at the router you should be able to verify radio connection to the router by inspecting the attached devices.

Drive station IP address configuration

The final step is that the drive station laptop will automatically obtain an IP address from the router.

This will place the drive station on the 10.0.0.x subnet. With this address, the drive station will not talk to the robot. To fix this it is necessary to manually configure the drive station IP address.

To configure the drive station IP address,

First, make sure that you have connected the drive station to the router via a Cat5 cable

Open ‘Start -> Control Panel’

Select ‘Network and Sharing Center’

Select ‘Change adapter settings’

Right-click on ‘Local area connection’, and select ‘Properties’

Click on ‘TCP/IPv4’ and select ‘Properties’

Select ‘Use the following IP address’

Specify the drive station IP address … format is 10.TE.AM.6

Specify the subnet mask: 255.0.0.0

Specify the default gateway: 10.0.0.1

Click on ‘OK’

Close out the control panel windows

As a suggestion, Use the admin capability at the router you should be able to verify drive station connection to the router by inspecting the attached devices.

Router configuration information

I don’t expect that any of this needs to be repeated; However, it is provided for completion.

I configured the router to a default LAN address of 10.0.0.1

I allowed the router to run DHCP

I configured the router 2.4 and 5 GHz. SSIDs so that each is unique. In this case, I used ‘Robodevils2’ and ‘Robodevils5’ for the 2.5 and 5 GHz bands, respectively

. I set the WPA password, for each channel, to ‘FIRSTRobotics’.

Note: both the SSID and the WPA key are required for radio configuration

Finally, I changed the admin password for the router to ‘Robodevils’