

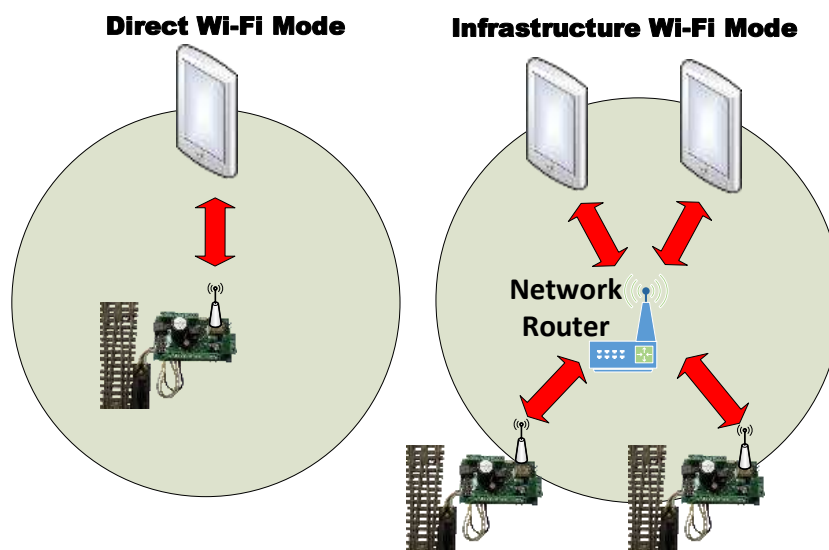
## Tower Operator App

This document is available at <http://www.wifitrax.com/appNotes/quickStart/Tower-Operator-Quick-Start.pdf>

The Tower Operator app allows you to control many of your active layout features – such as switch machines, lights, signals and power blocks – fitted with a WifiTrax Fixed Controller such as WFS-46 or WFG-80 or WFP-40. You can download and install the app from the Microsoft Store for Windows 10 or the Google Play Store for Android. Go to our website to find the current version:

<http://www.wifitrax.com/products/product-tower-operator-app-detail.html>

### Wi-Fi Direct and Infrastructure Modes



**The first thing to understand is that there are two ways of controlling your layout features over Wi-Fi, Direct Mode and Infrastructure Mode.**

In direct mode, your computer or tablet must be connected to the Wi-Fi Access Point within the controller. In this mode, you can control only one controller with each installation of Tower Operator on a computer or tablet. This mode is needed for initial setup of a new controller.

In Infrastructure Mode, the controllers and your computer, tablet or phone all connect as *Wi-Fi Stations* to the Wi-Fi Access Point of your network router. You can then build a full model railroad network with many layout features, locos, computers, tablets and phones. You can control many layout features with one installation of Tower Operator. You will usually want to work in this mode but this short document is limited to direct mode. Go to the following link for the full Wi-Fi Layout Quick Start document.

<http://www.wifitrax.com/appNotes/WifiLayout-Quick-Start.pdf>

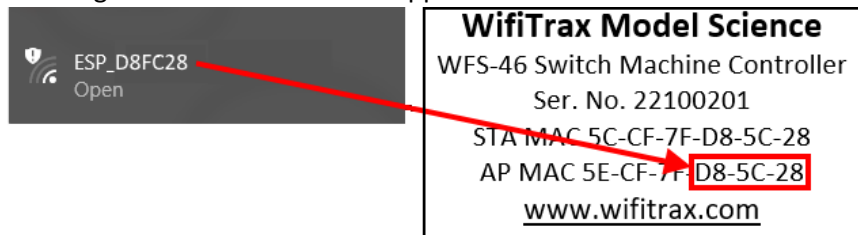
Also, you can consult the help pages for Tower Operator.






<http://www.wifitrax.com/help/towerOperator/help.html>

## Quick Start – Controlling Features in Direct Wi-Fi Mode

The way to get your controller running and give it a test is in direct mode.

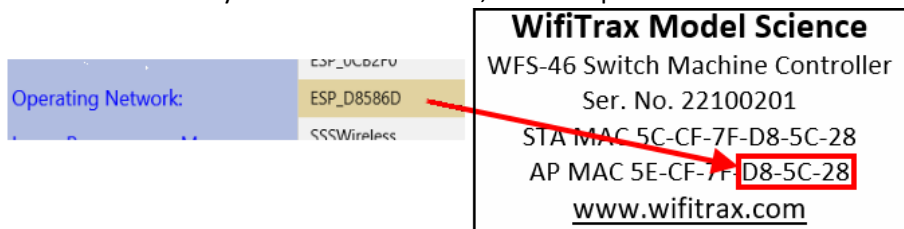
- (1) Connect your WifiTrax controller such as WFS-46, WFG-80 or WFP-40 to the features it will control and apply power (refer to the Quick Start leaflet for your particular controller).
- (2) Connect your computer to the WifiTrax controller’s access point using Settings and Wi-Fi, just like connecting to Wi-Fi in a restaurant. You will see the access points listed and the WifiTrax controller’s access point ends in the last six digits of the AP MAC printed on the label of the bag in which the unit was shipped.








- (3) Start the Tower Operator App on your computer or tablet .
- (4) On the App, select the Settings Tab , then the Networks Page , and Click or Tap the Scan Nets button . If this is the first time you have run Tower Operator, this will happen automatically – just click Continue on the pop-up.
- (5) Go to the General Page  of the Settings tab,
- (6) Click or tap the Operating Network drop-down.



- (7) Select by tapping. The network that has the last six digits equal to the last six digits of the AP MAC on the label of your WifiTrax module, for example:



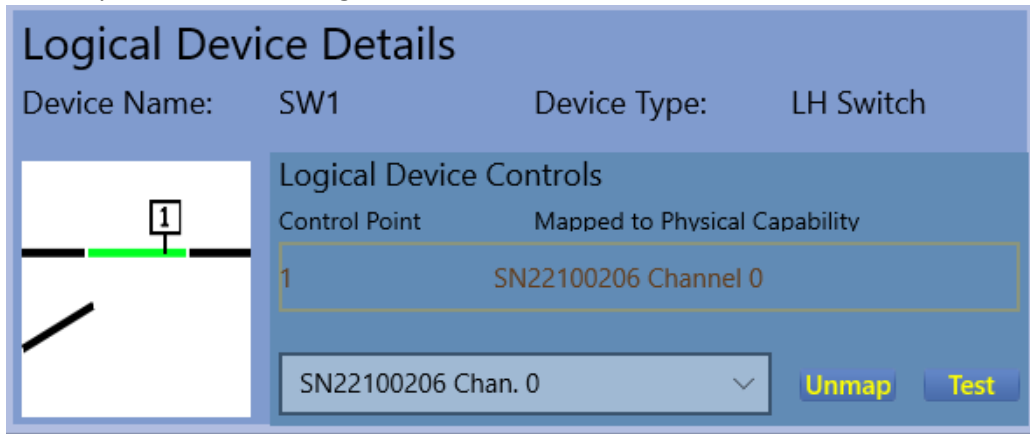
- (8) Click or tap the Save Settings button  and OK on the pop-up.
- (9) Select the Controllers Tab . Check the controller’s network is shown, then click the Scan Controllers button  and Continue on the pop-up.
- (10) Check that your controller appears and shows as On-line. Its name will be SN followed by the serial number on the label, e.g. SN22100206. You can change this later. If nothing appears, go back and check step (2). Your computer must be connected to the controller’s access point during this stage.
- (11) Go to the Devices Tab . Select the Device Category according to your controller. For example, WFS-46 controls switches so you would select Switches. Click the New Device


button  and create a new switch LH or RH, giving it a name SW1. The rest of this document will assume you have purchased a switch machine controller.



- (12) Now you should see your new switch listed. Click on it and observe the Logical Device Details at the bottom. You now need to assign a controller channel to your switch's tie bar.
- (13) To assign a controller click on the control point labelled "1" in the Logical Device Controls list which corresponds to the tie bar in the image. Don't click on the image. These are called "Capabilities". Select the first one – Channel 0.




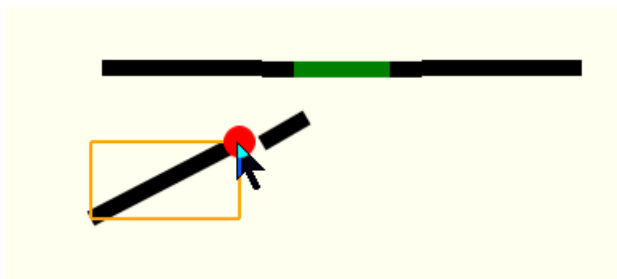
- (14) You have now created a Switch logical device and assigned its tie bar to the first channel of your new controller. Of course, if you have connected a different channel to your physical switch, you will need to assign that channel.






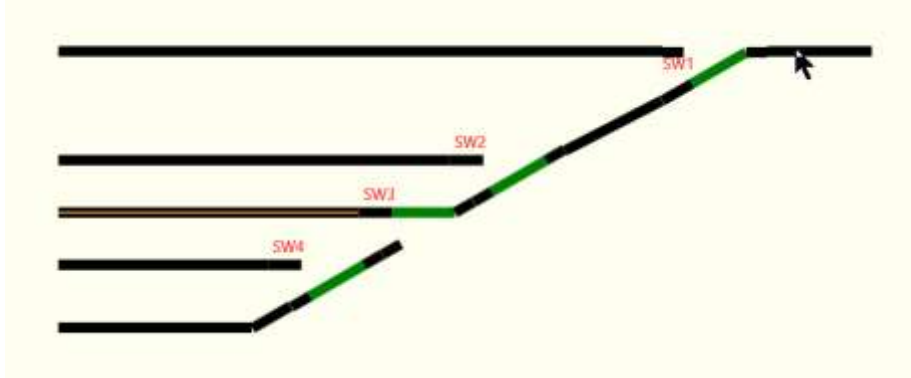
- (15) Click the Test button  several times. The tie bar should move back and forth. Notice that, only when working in Direct Wi-Fi Mode like this, if you cycle power on the WifiTrax controller, you will need to reconnect your computer to its access point.

- (16) Now click on the Maps button . Create a new map by clicking the New button  giving it a name "Test Map".

- (17) Click the Edit button . You can now see a list of logical devices at the bottom left. You will see your new SW1 switch there. Click on it and then click somewhere on your map. A symbol for the switch will appear. Now click on Track and again click on the map. This will create a length of track. Repeat this action twice more to add three sections of track to your map. Drag them around using the cursor and snap the ends to the three connecting points on your switch.

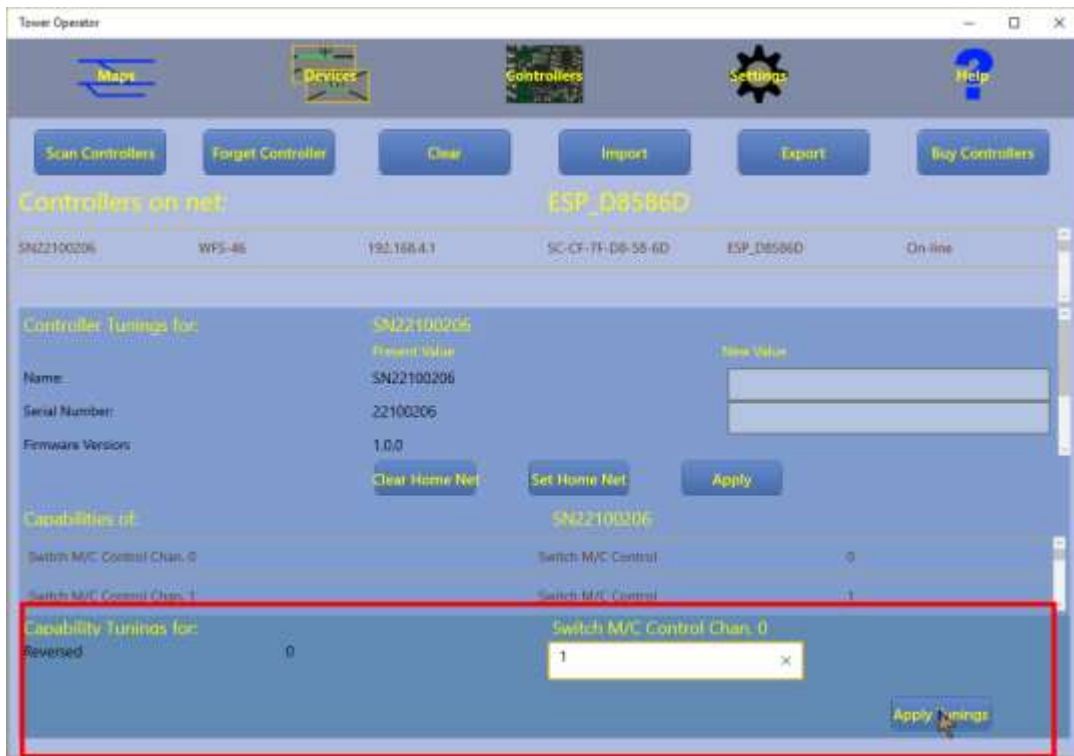


- (18) Click Save  and then Edit Exit . Now click Connect . This connects your map to your controllers so that it becomes what we call a Schematic Control Panel.
- (19) Now you can try clicking or tapping on the switch symbol on your map (now a control panel). The switch should toggle left and right.
- (20) Finally try clicking the entry track, then clicking one of the exit tracks (or the other way around). The switch should change to set up the correct route. You can extend this demo by creating some more RH switches (remember to assign the tie bars to controller channels) then making up a ladder network of sidings as below. Select the route to the required siding by clicking it, then the entry track. This routing happens without the need to change any settings in the controller – it's all determined by your map. Note that the tracks and switches must be connected for routing to happen. They need to snap together when editing!



## Common Problems

1. **My switch goes the wrong way.**  
When I select the turnout track, the switch moves to the straight position. You can solve this by going to the Controllers tab, selecting the controller and channel for the switch and changing the “Reversed” capability tuning:



2. **Nothing happens when I click on a switch on my map.**
  - a. Make sure that you have clicked the Connect button on the Map screen.
  - b. Make sure you have assigned controller channels to the switch's tie bar on the Devices screen.
  - c. Make sure that your computer or tablet can reach your controller's Wi-Fi Access point. You can open a command window and, in direct Wi-Fi mode, type ping 192.168.4.1:

```

Command Prompt
> exit
C:\Users\steve>ping 192.168.4.1

Pinging 192.168.4.1 with 32 bytes of data:
Reply from 192.168.4.1: bytes=32 time<1ms TTL=128
Reply from 192.168.4.1: bytes=32 time=1ms TTL=128
Reply from 192.168.4.1: bytes=32 time=1ms TTL=128
Reply from 192.168.4.1: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.4.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\Users\steve>

```

3. **I don't want to work in Direct Wi-Fi mode, it's a pain, I keep getting disconnected and I can't access other things like the internet.**  
Read the full Quick Start document and set your controllers for infrastructure mode, it's very easy.

## More Detail

When you are ready for more detail, continue reading the full quick start guide on our website:

<http://www.wifitrax.com/appNotes/WifiLayout-Quick-Start.pdf>

Also, you can consult the help pages for Tower Operator:

<http://www.wifitrax.com/help/towerOperator/help.html>

or all the articles and application notes:

<http://www.wifitrax.com/appNotes/howToArticles.html>

There you will find out how to create a Model Railroad Wi-Fi network working in Infrastructure Mode and make your fixed controller operate as a Wi-Fi station among the others on your layout. You will also find out about all the other things you can do with Tower Operator such as the full map editing features and how to share your maps, devices and controllers among different installations of Tower Operator.