

Getting More out of your WUFP-47

Once you are happy with simple operation you really must consult the full manual for information features available. For example, you can:

- Use the Home Net option. That way you are not limited to four cabs and you can leave you phone or tablet connected to your home network. When you power up your module, your phone or tablet will connect much more quickly.
- Use the WUFP-47 web pages to set up your locomotive driving channels and power blocks so that you can easily select from them on your iPhone or Android.
- Use Tower Operator for other WifiTrax products such as Switch Machine, Power and Lighting or Loco Operator to drive Locomotives
- Access the WUFP-47 Manual at <http://www.wifitrax.com/manuals/WUFP-47/WUFP-47-Manual.pdf>

More Information

Loco Operator:

<http://www.wifitrax.com/appNotes/quickStart/Loco-Operator-Quick-Start.pdf>

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

Other resources:

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

Loco Operator:

<http://www.wifitrax.com/appNotes/quickStart/Tower-Operator-Quick-Start.pdf>

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

WifiTrax products are made in Australia using globally-sourced components and services. Check our website for warranty information.

WifiTrax

www.wifitrax.com



WUFP-47 Getting Started Guide

This document is online at

<http://www.wifitrax.com/appNotes/quickStart/WUFP-47-Quick-Start.pdf>.

Please consult the full WUFP-47 manual for much more detail at

<http://www.wifitrax.com/manuals/WUFP-47/WUFP-47-Manual.pdf>

Package Contents

WUFP-47 Module in Static Shielding Bag, this document, mounting Kit

WUFP-47 4-Block Universal Power Controller

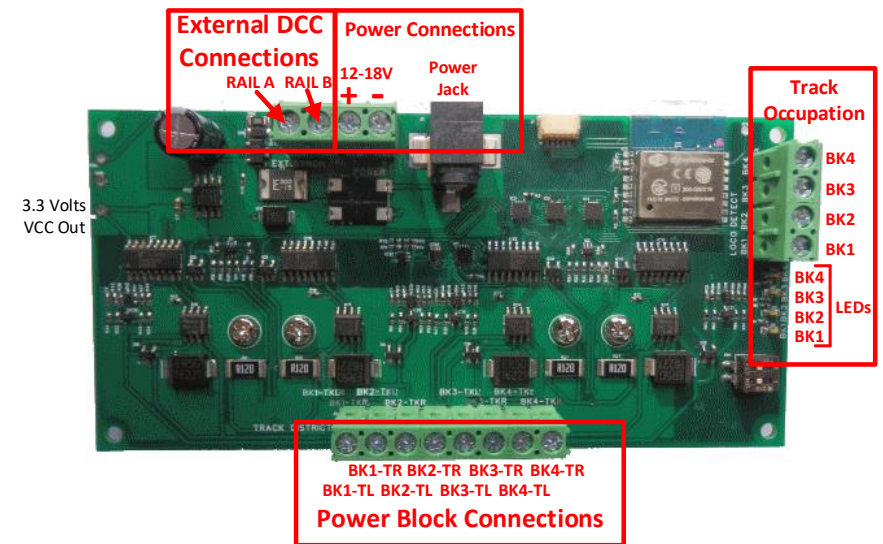


Figure 1. WUFP-47 Connections

This product is not a toy. Keep away from children. It is not suitable for use by persons under 14 years of age.

Warning: This product contains chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

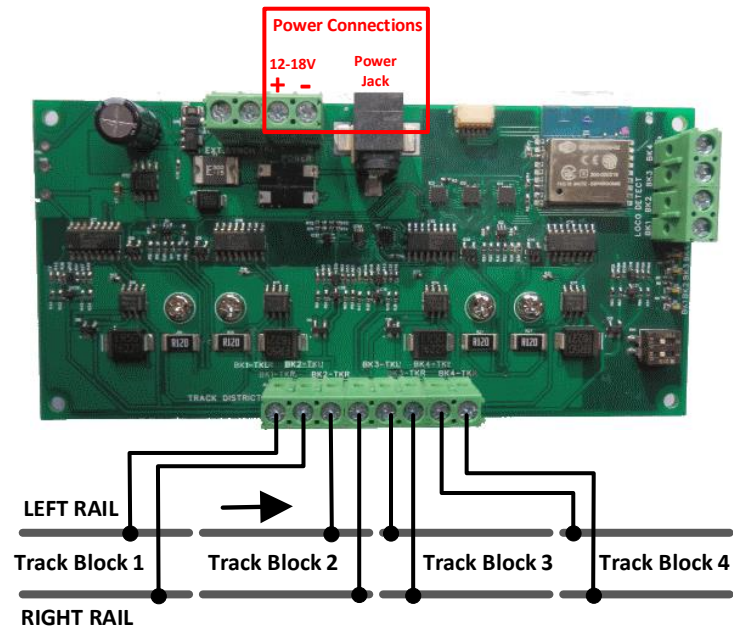


Figure 2 Connections to Four Sequential Blocks on the Model Railroad

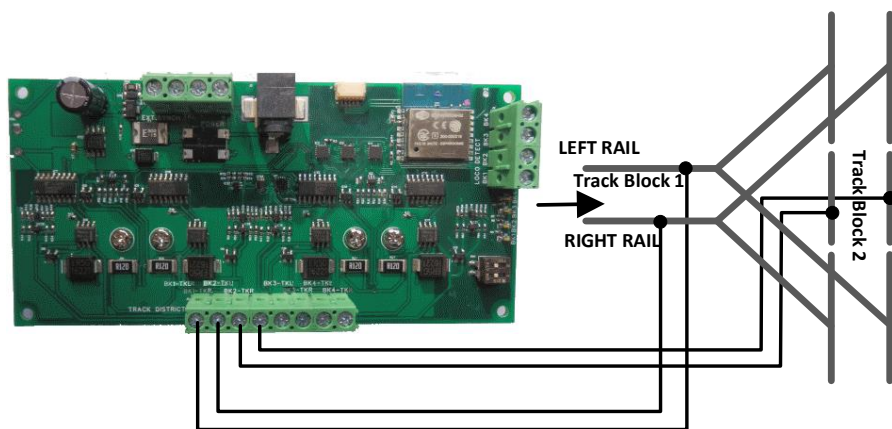


Figure 3 Connections for a Wye on a Model Railroad

You can change the mode of any set of blocks by tapping or clicking the radio button (dot with a circle) to the right of the mode you want. You must then click Save.

If you check the “Make Default” checkbox before clicking Save, the new configuration will become the new default which will be established at power-on instead of the factory reset configuration.

You can also set the block direction here. If you want to run a DC locomotive from one block to another, both blocks must be set to the same direction, otherwise power overload shutdown will occur when the loco crosses the gap. When in WTX or EXT modes, block reversal occurs automatically.

You may wonder what the WTX mode is for. This is to allow running of WifiTrax Wi-Fi Loco fitted locomotives where control is directly to the loco via Wi-Fi.

You can also install your module on your home network using the Home Net option from the main menu. If you do this, your phone or tablet can stay connected to your home Wi-Fi router.

The Settings menu provides the capability to change Wi-Fi channel and other things and also shows information such as the Serial Number.

Using Tower Operator

You can download and install Tower Operator from the Windows Store and Google Play Store. This app allows you to build schematic control panels (maps) including switches, signals, lights and power districts such as those provided as blocks by the WUFP-47. You can have Tower Operator running on a Windows or Android computer and work in a more Centralized Train Control (CTC) mode. Your schematic control panel will display your layout with all its switches power blocks etc. visible and controllable.

Using the WUFP-47 Web Pages

The WUFP-47 provides web pages that can be used to set various features but the most important is block assignment. You can display the web pages in Engine Driver by tapping the menu marked by three dots at the top right and selecting Web. In the full version of WiThrottle, you can tap the Web Server tab at the bottom. You can also use an ordinary browser such as Chrome, Safari or Edge by typing 192.168.7.1 into the URL bar.

WifiTrax WUFP-47 Web Page (192.168.7.1)

- [Settings](#)
- [Home Net](#)
- [Block List](#)
- [DC Loco Channels](#)
- [Reset](#)

From the main menu, you can tap Block List to view and modify the block mode assignments as below.

WUFP-47 SN21400400 Block List

[Back](#)

Block Mode

Block 0 WTX	<input type="radio"/>	CHA	<input checked="" type="radio"/>	CHB	<input type="radio"/>	CHC	<input type="radio"/>	CHD	<input type="radio"/>	EXT	<input type="radio"/>
Block 1 WTX	<input type="radio"/>	CHA	<input type="radio"/>	CHB	<input checked="" type="radio"/>	CHC	<input type="radio"/>	CHD	<input type="radio"/>	EXT	<input type="radio"/>
Block 2 WTX	<input type="radio"/>	CHA	<input type="radio"/>	CHB	<input type="radio"/>	CHC	<input checked="" type="radio"/>	CHD	<input type="radio"/>	EXT	<input type="radio"/>
Block 3 WTX	<input type="radio"/>	CHA	<input type="radio"/>	CHB	<input type="radio"/>	CHC	<input type="radio"/>	CHD	<input checked="" type="radio"/>	EXT	<input type="radio"/>

Block Direction

Block 0	Up	<input checked="" type="radio"/>	Down	<input type="radio"/>
Block 1	Up	<input checked="" type="radio"/>	Down	<input type="radio"/>
Block 2	Up	<input checked="" type="radio"/>	Down	<input type="radio"/>
Block 3	Up	<input checked="" type="radio"/>	Down	<input type="radio"/>

Save Make Default:

The factory reset configuration is shown above as in Table 1

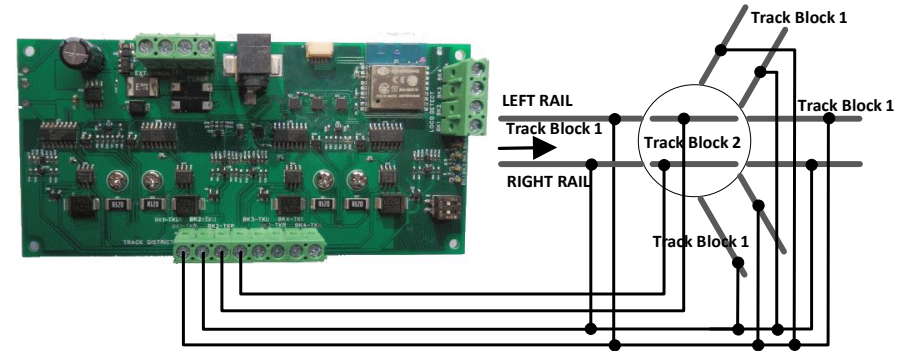


Figure 4. Connections for a Turntable on a Model Railroad

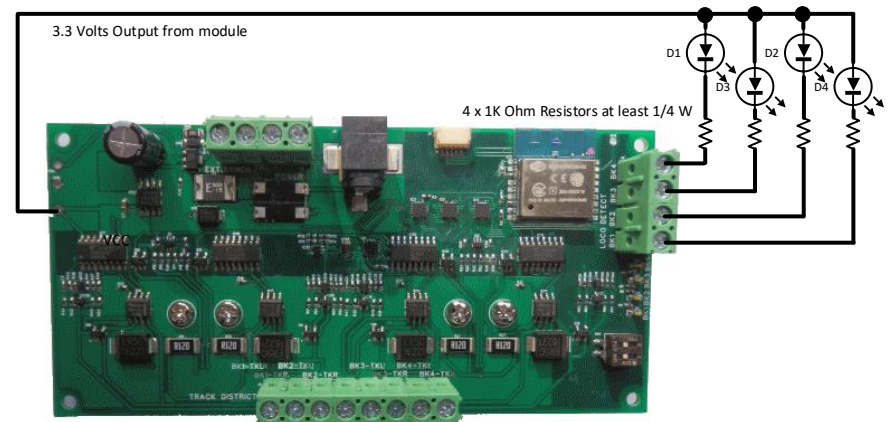


Figure 5 Connections for LED Occupation Indication

Block 1	Wi-Fi DC Channel A
Block 2	Wi-Fi DC Channel B
Block 2	Wi-Fi DC Channel C
Block 3	Wi-Fi DC Channel D

Table 1 Default block mode assignments after factory reset

What does WUFP-47 do?

The WUFP-40 module provides and controls power to up to four track blocks for N, HO, or larger scales. The blocks must be separated by gaps in both rails. Figure 1 shows the module with its connections labelled.

Each of the four blocks may be assigned to one of six modes: WTX, CHA, CHB, CHC, CHD and EXT. WTX simply provides continuous DC to the block. CHA – CHD provide controlled pulse width modulated DC with detection of loco back e.m.f. providing a precise control of DC locomotives. EXT allows you to connect an external DCC command station so that DCC locomotives may be driven on the block.

The module also provides four “Train driving channels”, A, B, C and D which appear as “Locomotives” in the module’s roster, visible to apps in Table 2 on a smart phone. You can select these and drive DC trains using the app or a TCS UWT-100 Universal Throttle on any blocks that have been assigned to that driving channel. For example if Block 1 mode is CHA, you can use an app to drive one DC loco in that block by selecting Channel A from the roster.

The WUFP-40 supports several scenarios shown in Figure 2, Figure 3, Figure 4 and Figure 5. Figure 2 is the simplest case in which the WUFP-40 controls four consecutive blocks. The other diagrams show how the module may be used to handle three scenarios in which it is necessary to reverse the polarity on blocks as the locomotive traverses them to avoid shorts. **Note that auto-reverse is disabled when in Wi-Fi DC mode.**

You can use a hand-held throttle designed to control trains that uses the WiThrottle protocol authored and maintained by Brett Hoffman. Examples are Engine Driver on Android and WiThrottle on Apple.

WDM-30 provides a Wi-Fi Access Point (Wi-Fi network). Four throttles at a time can join but you can remove this limit using a “Home Net” as described in the manual.

This is rather like using JMRI but **You don’t need to install JMRI to use the WUFP-47.**

(10) When you want to drive a different loco, tap the button at the top, Chan A in this example, then on the Select/Release screen, tap Release before selecting a new loco from the roster. You can also use the “Recent” checkbox option.

More Tips

Making Wi-Fi Connection Easier: Go back to your Android Setting and tap the wftrx_WUFP47_1_XXXXXXX_7 Wi-Fi network. Make sure the Auto Connect option is turned on. On your other Wi-Fi connections make sure the Auto Connect option is turned off. That way your Android device will always connect to the module if its powered on.

Auto Connecting in Engine Driver: Tap the “three dots” in the top right and select Preferences from the menu. Find “Connect Preferences” and “Auto Connect to First Throttle Server”. Tap the check box to turn it on. That way Engine Driver will connect to your WUFP-47’s WiThrottle Server whenever it is available.

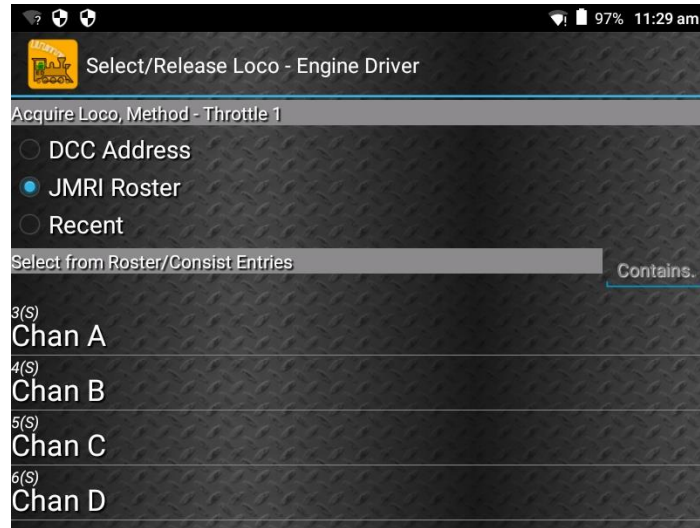
Avoiding Hang-ups: It’s best to release your loco before powering down your WUFP-47. When you power up again, Engine Driver should reconnect, but if not, you may have to restart Engine Driver.

Please consult the Engine Driver “About” menu for more information about the app. It is possible to control more than one locomotive at a time and select different display appearances and preferences. Consult the website for more information:

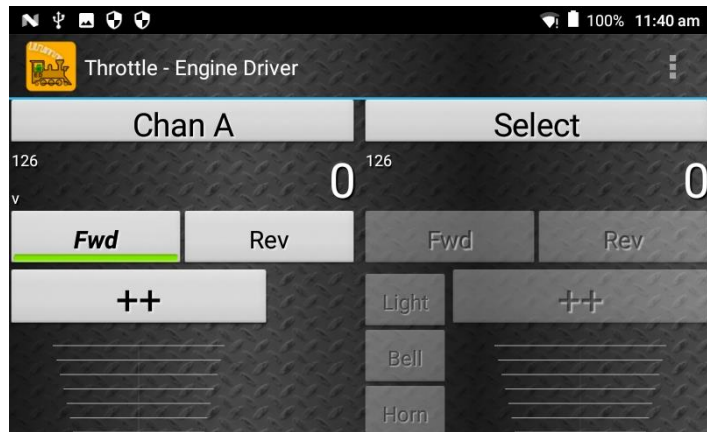
<https://enginedriver.mstevetodd.com/>

Please note that Engine Driver, has many features that may vary according to the version that you install. WifiTrax has no control over the features of Engine Driver, but has tested carefully its operation with our product. If you have trouble working with Engine Driver and our module, please email us your problem rather than using the Engine Driver support. The author of Engine Driver is not likely to know details about WifiTrax products, so please do not expect it. Support email: wifitrax@steveshrimpton.com or check our website

- (8) On the Select/Release Loco screen, check the “JMRI Roster” option and tap Chan A.



- (9) The Throttle screen appears again with Chan A as the selected loco. Try the throttle slider to make sure your loco responds. The DCC Function buttons are not operational when driving DC locomotives. Loco Operator has many variations of the throttle screen, so yours might look a little different.



These instructions assume you will start with the module in its default block configuration as in Table 1. You can start by using an app such as Engine Driver or WiThrottle on your tablet or phone to drive a DC locomotive on block 1

Installation Instructions

Mounting: Mount the unit using the four M3 metric screws, nuts and spacers provided. Mount the unit on a suitable piece of board, either your baseboard (top or bottom) or a separate board perhaps at the front of your model railroad. The component side of the module should face away from the board. Take care that no part of the unit touches any metal as this may cause a short circuit and result in permanent damage. Do not mechanically stress or bend the module as this may cause permanent damage. Take care to ensure that there is adequate ventilation to avoid overheating.

Connections: Power may be input to the module either via the two screw terminals labelled 12-18V in Figure 1 or via the Power Jack using a mains adapter. Insertion of a power jack will not disconnect the screw terminals so you can use those as outputs to power other modules. The power adapter must supply between 12 and 18 Volts DC with a Barrel Plug (2.5mm I.D. x 5.5mm O.D. x 9.5mm). A recommended power adaptor is available from WifiTrax:

<http://www.wifitrax.com/products/product-PA15-43-1-detail.html>.

When you have organized your track wire the connections from the module to your track according to the diagrams. You can either solder wires to the track or use clips and plugs provided by manufacturers. Use at least 13 x 0.12 Stranded insulated wire – black and red is a good idea.

Optionally, install four LEDs each with a 1K Ohm ¼ Watt series resistors to provide remote block occupancy indication as shown in Figure 6. You will need to solder a wire to the 3.3 Volt output on the module. Take great care not to short this power as it may damage the module. **Do not omit the series resistors or the module and LEDs may be damaged!**

Choosing and Installing your App

App Name	Author	Get From:	System	Advanced Features
Loco Operator 3	WifiTrax	Microsoft Store Google Play Store	Windows 10 Android	YES *
WiThrottle	Beth Hoffman	Apple Store	Apple IOS	Via web page.
Engine Driver	Steve Todd	Google Play Store	Android	Via web page.
Train Throttle	Drew Hoffman	Microsoft Store	Windows 10	No, Use browser

Table 2 Recommended Apps that work with the WUFP-47

* WifiTrax Loco Operator 3 provides setup for the more advanced features such as Home Net operation and tuning. This configuration may also be achieved via the web page using WiThrottle, Engine Driver or just a browser at the URL <http://192.168.7.1> once you have connected your computer or tablet to the WUFP-47's Wi-Fi network.

You need to install an app on your phone, tablet or computer to use the WUFP-47, Table 2 lists some recommended apps. Make your choice from Table 2 then make sure you are connected to the internet, visit the app store for your device manufacturer:



Search for the app by name then download and install the app.

Getting Started with WiThrottle on Apple IOS

There is a much more detailed description in the manual:

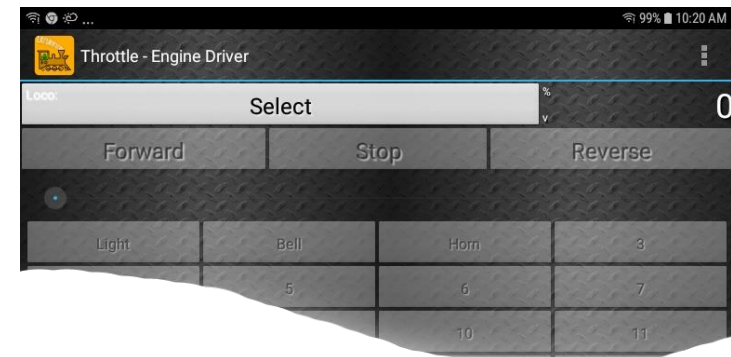
<http://www.wifitrax.com/manuals/WUFP-47/WUFP-47-Manual.pdf>

- (1) Make sure power to your WUFP-47 is on, the module is connected and there is a DC locomotive on the block of track connected to the BK1 output. On first power-up, DC Driving Channel A will be connected to Block 1.

- (5) Open the Engine Driver app on your Android phone or tablet, go through its setup accepting all the defaults and allowing the privileges it requests.
- (6) After setup, you should see the “Connect to Server” page with your WUFP-47 listed as a “Discovered Server”. The WUFP-47 acts as a WiThrottle server, similar to JMRI. Tap on it to connect. If for some reason it is not discovered, you must type the IP Address of the WUFP-47 unit, always 192.168.7.1 in the “Server Address” box at the top-left and the port value of 12090 in the port textbox, then tap the “Connect” button.



- (7) The Throttle screen should appear – ready to select a loco and drive. Tap the Select button.

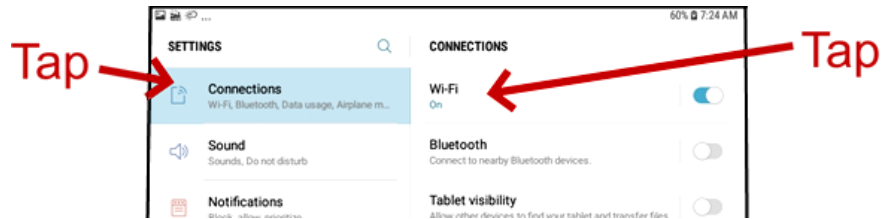


Getting Started with Engine Driver on Android

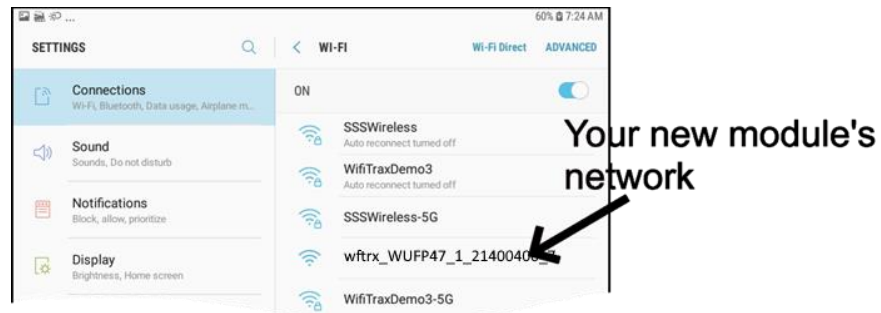
- (1) Make sure power to your WUFP-47 is on, the module is connected and there is a DC locomotive on the block of track connected to the BK1 output. On first power-up, DC Driving Channel A will be connected to Block 1.
- (2) Press the Home button and tap the settings icon on your Android phone or tablet:



- (3) Find the Wi-Fi option. On Android 7, you tap Connections on the left, then Wi-Fi on the right.



- (4) You see a list of available Wi-Fi Connections on the right. Look for one like wftrx_WUFP47_1_XXXXXXX_7, where XXXXXXXX is the serial number of your unit that appears on its label. Tap on that – no password is required – and wait for it to connect.



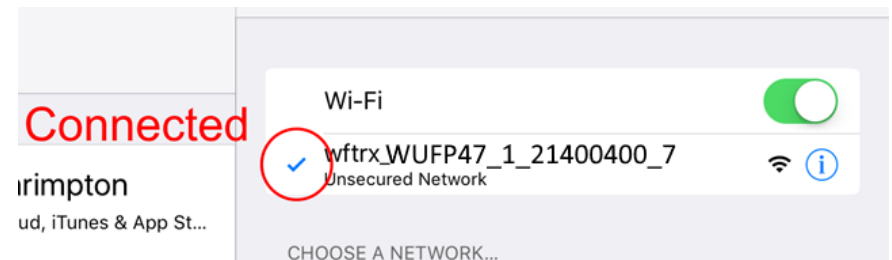
Tap the Settings icon on your iPhone or iPad, etc.



- (2) Tap Wi-Fi on the left-hand menu. Under CHOOSE A NETWORK on the right, the list should include one like wftrx_WUFP47_1_XXXXXXX_7, where XXXXXXXX is the serial number of your unit that appears on its label. Tap that Wi-Fi Network. **You must always connect to this Network otherwise WiThrottle will not see the WUFP-47.**



- (3) No password is required and after a few moments you should see that it has connected.



- (4) Open the WiThrottle app. This app has some tabs at the bottom to select screens:



- (5) You should see the connection screen headed by “wftrx_WFD30_XXXXXXX”. If not, tap the Settings tab at the bottom right, then Server Configuration at the middle left, then Current Server at the top right.
- (6) The WUFP-47 is a WiThrottle Server. It should appear in the AVAILABLE WITHROTTLE SERVERS section, identified by its serial number SNXXXXXXX. If it is visible, tap it and continue at (8).

The title shows your connected to your module's Wi-Fi network

The module's WiThrottle server has been found. Tap to connect.

Manual Connect only if needed.



- (7) If for some reason it does not appear, Set Server Manually. Tap “Search for Wi-Fi Modules”. The IP Address and port are pre-entered as 192.168.7.1 and 12090, so just tap “Connect”.
- (8) Now tap the Address tab at the bottom to show the Address screen. Tap Roster at the top-left, tap Chan A and tap the Set button.



- (9) Tap the Throttle tab at the bottom-left of the screen and you can begin driving. The DCC Function buttons are not operational when driving DC locomotives..

More Tips

Making Wi-Fi Connection Easier: Go back to your Apple Settings and tap the wftrx_WUF47_1_XXXXXXX_7 Wi-Fi network. Make sure the Auto Join option is turned on. On your other Wi-Fi connections make sure the Auto Join option is turned off. That way your Apple device will always connect to the module if its powered on.

Auto Connecting in WiThrottle: Tap the “Settings” tab at the bottom right, then “Server Configuration” on the left, then turn on “Use automatic network configuration”. That way WiThrottle will connect to your WUFP-47’s WiThrottle Server whenever it is available.

Avoiding Hang-ups: It’s best to release the loco before powering down your WUFP-47. When you power up again, WiThrottle should reconnect, but you may be asked, on a pop-up, to select the wftrx_WUF47_1_XXXXXXX_7 network again. If WiThrottle does not reconnect, you may have to restart it by going back to the Home screen and tapping its icon.

You can kill an app completely in Apple IOS by swiping up from the bottom of the home screen to show the switcher screen, then swiping its icon off the screen. Then you can restart it from the home screen.

Please consult the WiThrottle manual for more information and tips:

<https://www.withrottle.com/html/manual.html>

Please note that WiThrottle, has many features that may vary according to the version that you install. WifiTrax has no control over the features of WiThrottle, but has tested carefully its operation with our product. If you have trouble working with WiThrottle and our module, please email us your problem rather than using the WiThrottle support. WiThrottle support people do not know details of WifiTrax products, so please do not expect it. Support email: wifitrax@steveshrimpton.com or check our website