

Getting more out of your WMH-20

Once you are happy with simple operation using either iPhone or Android, you really must consult the full manual for information about the great features available. For example, you can:

- Use the Home Net option. That way you can leave you phone or tablet connected to your home network. When you power up your WMH-20, your phone or tablet will connect much more quickly.
- Explore the WMH-20 web pages to see the features available.
- Use the WFD-60 Gateway to operate more than one WMH-20, WMR-10 or other Wifitrax modules such as WFS Series Switch Machine Controllers or Wi-Fi/DCC interface modules.
- Use the WFD-60 Gateway to operate trains fitted with WMH-20 from your existing DCC system.
- Access the WMH-20 Manual at <http://www.wifitrax.com/manuals/WMH-20/WMH-20-Manual.pdf>

More Information

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

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.

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

WifiTrax

www.wifitrax.com



WMH-20 Getting Started Guide

This document is online at

<http://www.wifitrax.com/appNotes/quickStart/WMH-20-Quick-Start.pdf>.

Please consult the full WMH-20 manual for much more detail at

<http://www.wifitrax.com/manuals/WMH-20/WMH-20-Manual.pdf>

Package Contents 1 x WMH-20 Module, this document.

WMH-20 Wi-Fi Locomotive Controller

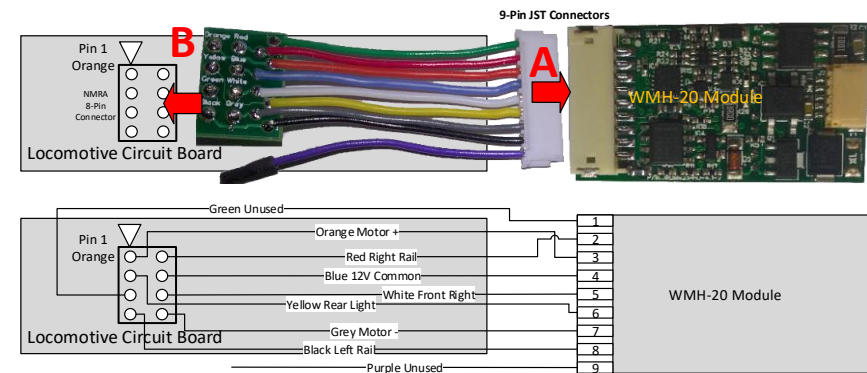


Figure 1 WMH-20 Connections

What does WMH-20 Wi-Fi Locomotive Controller do?

The WMH-20 may be mounted in an HO or other small locomotive. It provides an ability to directly control the motor of of a locomotive together with front and rear LED lights, using Wi-Fi. It uses a harness to plug into an 8-pin DCC-Ready connector in the locomotive as in Figure 1.

- You can drive the train and configure the device over Wi-Fi, via the web pages generated by the WMH-20, using a web browser such as Safari, Chrome or Edge on a computer, tablet or smart phone.

- You can drive a train using a smart phone, tablet or computer using one of the recommended apps in Table 1. Apps that use the Hoffman WiThrottle Protocol will usually work with WMH-20.
- You can also use the UWT-100 Universal Wi-Fi Throttle manufactured by TCS.
- You can use the Wifitrax WFD-60 as a gateway to control multiple WMH-20, WMR-10, WFS series Switch Machine controllers, Wi-Fi DCC interface modules etc., from your smart phone, tablet or TCS UWT-100
- You can give your loco a DCC address and control it via the WFD-60 from your DCC system.

You do not need to install JMRI to operate the WMH-20

App Name	Author	Get From:	System	Comments
WiThrottle	Brett Hoffman	Apple Store	Apple IOS	Can access web pages.
Engine Driver	Steve Todd	Google Play Store	Android	Can access web pages.
Loco Operator 3	WifiTrax	Microsoft Store Google Play Store	Windows 10 Android	Speedometer in app.
Train Throttle	Drew Hoffman	Microsoft Store	Windows 10	
Web Browser	Chrome, Safari, Edge etc.	Already installed or search for download.	Apple IOS, Windows, Android	Configuration and simple running of trains.

Table 1 Recommended Apps that work with the WMH-20

Installation Instructions

The WMH-20 is designed to use a harness to plug into a standard 8-pin DCC-Ready socket in a locomotive. Harnesses may be purchased from Wifitrax, but any DCC harness designed to connect the NMRA Standard DCC 8-pin socket to an NMRA Standard JST 9-pin socket will suffice. You can also purchase a harness from Wifitrax (flying-lead) that has open wire leads connected to the JST plug so that you can solder to correct locations in your locomotive and install it wherever it will fit comfortably.

In this mode, the WMH-20 acts as though it is a 126-step DCC decoder.

Tap the single right arrow button > to increase the speed by one DCC step or the right double arrow >> button to increase the speed by 10 DCC steps. Tap the left arrow button < to reduce the speed by one DCC step or the left double arrow button << to reduce the speed by ten DCC steps.

Alternatively use the slider with the mouse cursor or your finger by touching, dragging and releasing, or by tapping anywhere on the slider.

Change direction using the Forward/Reverse button and turn the lights on and off. The lights may not come on until the loco moves.

Using an App on your Tablet or Smart Phone

Consult the WMH-20 manual for details on installing and operating one of the apps in Table 1.

<http://www.wifitrax.com/manuals/WMH-20/WMH-20-Manual.pdf>

Note that you must always connect to the wftrx_WMh20_1_XXXXXXXX_7 before starting the WiThrottle or Engine Driver app.

Using the TCS UWT-100

Consult the WMH-20 manual for details on use of the TCS UWT-100.

<http://www.wifitrax.com/manuals/WMH-20/WMH-20-Manual.pdf>

The TCS UWT-100 will need to be told to connect to the module's wftrx_WMh20_1_XXXXXXXX_7 network before it will detect the module as a WiThrottle Protocol server.

Connect to your Home Network

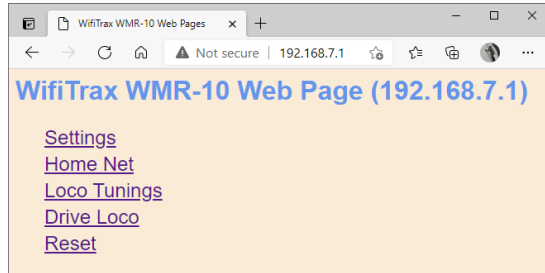
Use the Home Net option on the WMH-20 Web Pages to configure the module to automatically connect to your home Wi-Fi network. Then you can leave your hand-held devices permanently connected to your home network. Check the manual for more details.

Using the Web Pages

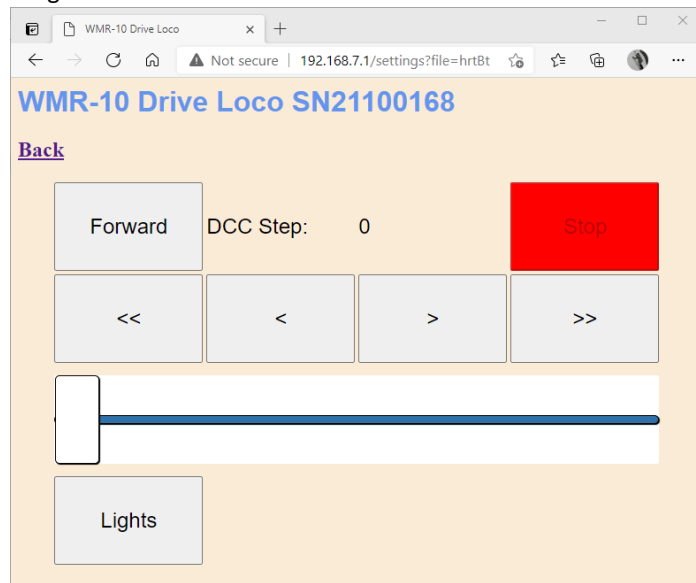
- (1) Once you are connected to the module's network, open a browser such as Safari or Chrome and type the following in the URL bar followed by the Enter or Go key: 192.168.7.1

This is the IP Address of the WMH-20 web pages when you are connected to its wftrx_WMH20_1_XXXXXXX_7 network.

- (2) You will see the Main Menu page as below:



- (3) To test drive the locomotive, you do not need to install an app., click or tap the Drive Loco option. You will see the screen below. This is a basic hand-held throttle that will enable you to drive in forward and reverse as well as test the lights.



For more information, please see our website www.wifitrax.com

- (1) Ensure your locomotive is working properly. Do not install our unit in locomotives with old or damaged motors. Remove the plastic shell from your locomotive.
- (2) **Make sure that the motor is isolated from the track power!** This is most important – if one side of the motor is connected directly to the track, possibly through the frame, you will have to re-wire the locomotive before you start. You will not have this problem with DCC-Ready Locos.
- (3) Find the 8-Pin DCC Ready socket on the circuit board inside. Remove the jumpers. If your loco does not have an 8-pin socket you may be able to use our “flying-lead” harness and solder the wire ends.
- (4) Check the intended location of the WMH-20 unit in the loco. Insulate any exposed metal that will be underneath it with electrical tape. **This is very important.** We do not recommend putting shrink wrap around the unit as this may cause it to overheat.
- (5) Make sure you have bought a harness of the correct length. Any standard DCC harness that fits will be OK.
- (6) Connect your chosen harness to the 9-pin JST socket. See **A** on Figure 1. Make sure it is the right way around. **Do not force it in the wrong way around or you will break the socket.**
- (7) Connect the other end of the harness to the DCC ready 8-pin connector on the locomotive circuit board. See **B** on Figure 1. Make sure the pin marked Orange matches the Pin 1 or Orange label on the Locomotive Circuit Board. If you want the module the other side of the DCC-Ready connector, you can use one of our “Reversed” harnesses and flip the WMH-20 module over as in Figure 3. Check everything carefully for pinched wires or accidental contacts.
- (8) Place your locomotive on the track and apply power we recommend 12 – 14 volts (Note 3).
- (9) Verify that the front and rear lights flash briefly when the track power is turned on. Replace the shell.

Notes and Cautions

1. Be sure to insulate all metal parts of the module from the locomotive frame or any electrical connections. You can use a strip of electrical tape to do this.
2. The 12V Common (Blue) is provided by the WMH-20 module. DO NOT CONNECT THIS TO THE TRACK POWER. This is used to supply power to the LED front and rear lights. If your loco's LEDs are not bright enough, there may be a series resistor that you can remove. Our unit already has a 1K Ω series resistor. Alternatively, you can buy LEDs from our website chosen especially for our units.
3. The track voltage must not exceed 18 volts. We recommend 12-14 volts. The polarity of the track voltage does not matter. If you run at 18 volts and full speed, you may overheat some locomotive motors and/or the unit may shut down due to its over-temperature protection. Try to locate the unit so that there is as much exposure to the air as possible.
4. The polarity of the motor connection does not matter as you can change the direction using the WMH-20 Loco Tuning Web Page.
5. If you need to remove the 9-pin JST connector, grasp ALL the wires firmly between your thumb and first finger of your left hand and the unit with the thumb and first finger of your right hand. Pull smartly. If you pull on only one or two wires you will pull them out of their crimped ends and break the harness. Be careful not to damage the JST connectors as they are rather delicate.



Figure 2 Typical WMH-20 Installation Always put a piece of electrical tape underneath!



Figure 3 Using the Reversed harness

Testing and Configuring your WMH-20

You can test and configure the WMH-20 using its web pages which are accessible from any browser on IOS, Android or Windows.

Connecting using an Apple IOS Phone or Tablet

- (1) Tap the Settings icon on your iPhone or iPad



- (2) Tap Wi-Fi on the left-hand menu. Under Other Networks on the right, the list should include one like wftrx_WMH20_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 to access the WMH-20 web pages** until you operate in home-net mode.

Connecting using Android

- (1) Press the Home button and tap the Settings icon:



- (2) Tap Connections, then Wi-Fi and select the module's network as above.

Connecting using Windows

On your Windows 10 desktop or laptop, click the networks icon in the system tray and select the network described above.