

WNI-32 NCE Pro Cab Wi-Fi Interface Module

Compatibility, Firmware Issues and Workarounds

This document is online at <http://www.wifitrax.com/manuals/WNI-32/WNI-32-known-issues.pdf>.

Please see our website for information on our limited warranty.

WifiTrax Model Science



www.wifitrax.com

© WifiTrax Model Science 2025 All Rights Reserved

Compatibility

Hardware: The WNI-32 has been tested and is compatible with Pro Cab PCB Rev E, F and F2; and Power Cab PCB Rev E, F. some customers have had success with earlier hardware. Some Pro Cabs have the 9-pin JST socket at the end near the socket. Please ask for a longer 9-way JST cable for these.

WNI-32 with serial numbers less than 60200176 need a modification to work with Pro Cab versions manufactured in 2025. These have a PCB Revision “Rev F2”. These units can be fixed with the addition of a 100K pull-up resistor between pins 1 and 5 of the 9-pin JST connector. [See this document for instructions](#) or contact Wifitrax to return for free modification.

Firmware: Pro Cab Firmware Version 1.3.

Known Firmware Issues

Number	Description	F/W Version found	Work Around Prior to Fix	F/W Version Fixed	Comments Relating to fix
1	Recall Stack Issue: When returning to a loco in the recall stack, sometimes functions are reset on the loco.	1.0.11	The functions are not reset when the loco is moving. If the loco is left stationary functions must be reconfigured when returning to the loco in the recall stack.	1.0.12	In version 1.0.11, the WNI-32 is disconnected from the loco being controlled by a WFD-30/31 when a new loco is selected in the recall stack. When the loco speed is zero, the loco page in the WFD-30/31 will be removed. If the speed is non zero it will be retained for continued control at the same speed when the operator returns to the loco in the WNI-32 recall stack. In Version 1.0.12, connection is always maintained to all locos in the recall stack.
2	Recall Stack Issue: When a loco is deleted from the recall stack (by setting the DCC Address to zero), other locos in the stack cannot be controlled.	1.0.11	When removing a loco in the recall stack, you need to re-select other locos in the recall stack.	1.0.12	In versions 1.0.11 all loco connections added to the WiThrottle connection were removed using the MT-*

					command instead of the address of the loco being removed.
3	When a loco is driven using a tethered Pro Cab, turning on a second Wi-Fi Pro Cab (fitted with WNI-32) will stop the loco if it is in the Wi-Fi Pro Cab's recall stack. This also happens when the second Wi-Fi Pro Cab is turned off.	1.0.12	When driving a loco with a tethered Pro Cab, either leave the Wi-Fi Pro Cab turned on or remove the loco from the recall stack of the Wi-Fi Pro Cab.		For the recall stack to operate correctly in the WNI-32 and avoid Issue number 1, connections need to be maintained continuously. Due to the behaviour of WFD-30 and 31, locos are reset when a connection is first established and when a connection is removed. Thus on power-up and power-down of the WNI-32, locos in the recall stack will stop.
4	When connecting the WNI-32 to a WFD-30, WFD-31, any other WiThrottle Device or JMRI, connection fails if the WiThrottle Server is not set to the default of 12090. Thus the WNI-32 always attempts to connect to port 12090. Symptoms are the continuous rapid flashing white of the LED.	1.0.12	Set your WiThrottle Server to Port 12090.	1.1.0	This has been fixed in 1.1.0 by retrieving the port during mDNS scanning and saving with the connection info. The F/W then uses the correct port when connecting. There was a bug in the 1.0.12 WNI-32 firmware that did not take account of the mDNS Port that is returned as part of the mDNS data from the WiThrottle Server.
5	The F2 function behaves different to a tethered NCE Pro Cab. For a tethered NCE Pro Cab, the Horn button causes the horn to sound when pressed and cease when released. The F2 button causes the horn to sound when pressed and continue until pressed a second time. Using the WNI-32 the Horn button behaves the same as a tethered Pro Cab	1.0.12	The latching behavior can be changed by using a rostered loco in a WFD-30 or 31. You can set F2 to latching instead of the default of non-latching. Unfortunately, this also affects the horn button. The fix in 1.1.0 corrects the issue.	1.1.0	This has been fixed in 1.1.0 so that the default behaviour is the same as a tethered Pro Cab, i.e. the horn latches when F2 is pressed. An option has been added on the Cab Parameters screens to allow this latching behaviour to be removed so that F2 can be made to behave the same as other function keys.

	but the F2 button causes a short horn sound each time it is pressed.				
6	<p>The Loco DCC Address appears different when WNI-32 is used to when the Pro Cab is operated tethered.</p> <p>For a tethered NCE Pro Cab, three digits are always displayed for the DCC address of a loco. E.g. for DCC address 3, "003" is displayed. For long DCC address 3, "*003" is displayed.</p> <p>The WNI-32 connected Pro Cab shows "3" and "*3" instead.</p> <p>This is confusing since operators seem to regard "003" as identifying a loco rather than just "3".</p>	1.0.12	No work around.	1.1.0	<p>This has been corrected in version 1.1.0 so that for DCC Addresses of 999 or less, 3 digits are always displayed padded with zeros as necessary. For a long address, a * is added to the left of the most significant digit.</p> <p>For DCC addresses greater than 999, 4 digits are displayed with no * being displayed since the address is obviously long.</p>
7	Users have requested that the WNI-32 remember alternative connections to a WiThrottle Server. This would be useful when using on multiple layouts with different network configurations.	1.0.12	Enter the connection information manually for each layout	1.2.1	<p>This requested feature has been added in Version 1.2.1. The last 5 connections are automatically saved. The list is displayed on the Pro Cab using EXPN, RECALL, INC and DEC scroll forward and back, 1 selects for connection.</p> <p>See the manual version 1.4 for details.</p>
8	When upgrading the firmware from 1.0.12 to 1.2.1, the serial number stored internally to the module is lost. The serial number becomes 60200000. Note also 9 below	1.2.1	Enter the correct serial number using the Web screens for the WNI-32. These are available by pointing a browser to the IP Address of the WNI-32. Enter the Reset screen and replace the 60200000 serial number with the correct serial	1.2.2	<p>This has been fixed in version 1.2.2. When updating from 1.0.12 or earlier please skip 1.2.1 and update to 1.2.2.</p>

			number. If your region in US/CA precede it with a 1. Please see the manual at the Reset description.		
9	When displaying the serial number on the Pro Cab by pressing EXT followed by Enter, for North America regions, the serial number is preceded by a 1 and truncated to 8 digits. Thus 60200123 appears as 16020012.	1.20.12, 1.2.1	View the serial number by pointing a browser to the IP Address of the WNI-32 and view the Settings screen.	1.2.2	Display on Pro Cab corrected to display serial number in 8 digits without the preceding 1.
10	Pressing PROG/ESC multiple times until "Browse Consists" appears, caused the Wi-Fi Pro Cab to hang up. Restart is needed. The EXPN, 1, power-down option does not work.	1.2.2	Avoid going as far as the Browse Consists screen if possible. If you do forget and hit this hang-up: (1) Remove the batteries and replace to completely restart, (2) Tether your Pro Cab to an NCE Command Station, to force power-down of WNI-32, then remove tether and press the red button.	1.2.3	Trivial code change to treat Browse Consists the same as other unimplemented features.
11	Red button has to be pressed multiple times to cause power-up of Wi-Fi Pro Cab.	Not a firmware issue Present on Serial Numbers up to 60200250	This is caused by the way the NCE PCB gold fingers are configured under the Red button. The red button when pressed actually connects four sets of gold fingers. Sometimes, probably due to wear of the conductive coating on the rubber under the button, contact is not	Fixed on Serial Numbers greater than 60200250	Hardware fix: Replace R10 with 1K resistor. Please see "Technical Note on Intermittent Power-up via Red Button on Pro Cab" below.

			made properly. Pressing the button a little at the side usually helps. <u>All units have been tested prior to shipment and all Power-Up multiple times under test.</u>		
12	When in the "EXPN" expansion pressing "2 =F" Rather the showing the higher options, it looks to just advances the menu to the next menu, so you up go to the "RESET SNxxxx" "1=RESET ENTER=NEXT" screen	1.2.1	Occurs because there are shortcuts that override the selection of Function Display. I.e. 2 takes you to screen 2.	1.2.4	Removed 2 as a shortcut to screen 2. 2 now displays functions.

Technical Note on Intermittent Power-up via Red Button on Pro Cab

The NCE circuit board has 4 sets of interleaved gold fingers under the red Emergency Stop button. When the red button is pressed, theoretically the four sets of interleaved gold fingers are all connected together. However various factors mean that sometimes only two or three actually connect. This is affected by:

1. The amount of wear on the conductive coating on the rubber overlay under the red button
2. The manner in which the button is pressed. For instance, pressing to the side sometimes connects only tow or three of the gold fingers.

Two of the gold finger patterns come out to the WNI-32 and are called "Wake Up". These need to be connected momentarily to cause the SEPIC converter in the WNI-32 to be enabled and generate 5V power to the Pro Cab and also 3.3V power to the WNI-32.

The WNI-32 supplies 5V battery voltage through one of the wake-up lines and expects that to be fed back through the other wake-up line when the button is pressed. The 5V is supplied through a 10K resistor (R10) on the WNI-32.

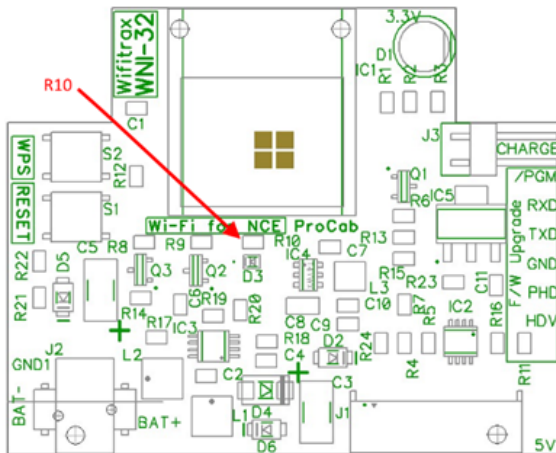
One of the other two patterns of gold fingers is connected to an output of a CMOS 3 to 8 decoder chip (74HC138B) which is unpowered at the time power-up is attempted. The 4th gold finger pattern has no effect.

If pressing the red button results in the 3rd gold finger pattern to make contact with the two wake-up patterns, the result is that current from the WNI-32 flows through protection diodes on the output of the 74HC138B to its 5V power and thus reduces the voltage feeding back to the WNI-32 to about 1.5V which is not enough to enable the SEPIC converter.

So it turns on if the red button conductive coating does NOT contact that 3rd gold finger going to the decoder, even if only momentarily, to give it a chance to power up.

In fact brand new button overlays probably have more chance of always contacting all four sets of gold fingers and therefore less chance of successful power up.

This explains how pressing the button slightly to the side, often causes successful power up.



The issue can be fixed by replacing the 10K resistor R10 with a 1K resistor which fixes the problem as it allows current to flow through the protection diode pathway described and yet still maintain enough voltage fed back to the WNI-32 to cause successful power up.

Under the fix, the current flowing through the protection diodes of the decoder is still well within the specified limits for that chip (74HC138B), so there will be no chance of damage to the 74HC138B.

So the fix is to change R10 on the WNI-32 from 10K Ohm to 1K Ohm. The recommended component is RC0805FR-071KL, a Yageo component. This is a 1/8 Watt, 1%, 0805 resistor (0.08 inch x 0.05 inch). Any equivalent resistor will be acceptable.

Obtainable from many electronic distributors such as Mouser, Digikey, RS Components etc.

<https://au.mouser.com/ProductDetail/YAGEO/RC0805FR-071KL?qs=1ogmaHw32WJjeGY0DHXakQ%3D%3D>

<https://www.digikey.com.au/en/products/detail/yageo/RC0805FR-071KL/727444?s=N4lgTCBcDaIEoGEAMAOJBWAYnAtEg7AlwDSAMiALoC%2BQA>

<https://uk.rs-online.com/web/?msocid=16a8baa70e2768962b0cac600ff96966>

A good technique is to use two small soldering irons on each side to remove the existing R10, then clean with alcohol and place a spot of no-clean flux on each pad. Hold the new resistor down with tweezers and apply a soldering iron to each end that is pre-loaded with some solder on its bit. Then clean with alcohol and dry.

Using a heat gun to desolder the existing resistor is not recommended as it will likely blow other components off the board.

You can also solder the new resistor on top of the old one.

PLEASE ONLY ATTEMPT THIS IF YOU HAVE THE NECESSARY SKILL. WIFITRAX WILL NOT REPLACE UNITS FREE OF CHARGE THAT HAVE BEEN DAMAGED BY IMPROPER REWORK ATTEMPTS.

If in doubt contact Wifitrax for a free return-to-base rework.