CW-90/90X

WeighVault® Installation

WeighVault allows users to add, edit, and access IDs over a Ethernet or WLAN network connection. WeighVault surpasses the indicator's on-board ID limitation and eliminates front-panel entry of ID parameters. It collects data as transactions occur, and provides detailed reports which can be exported various file formats including Microsoft Excel, Microsoft Word, and PDF.
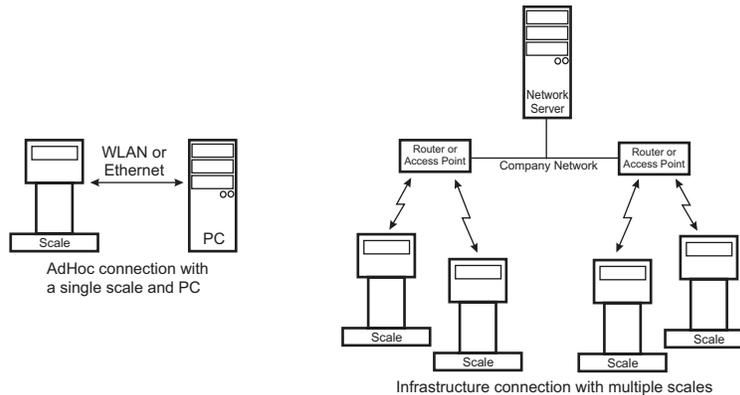
Figure 1. WeighVault Possible Connections

Requirements	Descriptions
WeighVault Requirements	• Windows 10 build 1607 or newer (64 bit only) or equivalent Windows Server OS • 2.0 GHz processor or faster • 250 MB drive space needed for install • 8 GB ram or greater • Microsoft SQL Server 2019 (Express edition included) • A supported web browser (Safari, Google Chrome, Microsoft Edge, Mozilla Firefox) • TCP/IP connections to the indicator
Network Requirements	• Static IP address for PC running the WeighVault service • Known IP address and subnet of the host PC; if connecting via WLAN, known network SSID and security credentials (pass keys and phrases) • 5 Ghz Wi-Fi and compatible device (computer, tablet or mobile phone) for WLAN configuration
Other Requirements	• Indicator must be connected to a PC via a wired (Ethernet) or wireless network • Specific WeighVault settings must be configured in the indicator's menu
Ethernet/WLAN Connection	One of the following: • Ethernet TCP/IP Interface Option (PN 200578) • WLAN Option Card (PN 206272) • External RS-232 to Ethernet/WLAN converter

Table 1. System Requirements

Contents

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1. Installation

1.1 Install Internal Ethernet or WLAN Cards

NOTE: For detailed instructions, refer to the manuals supplied with option kits. Perform the installation at an ESD-safe area.

1. Disconnect the indicator from its power source.
2. Remove the back cover from the indicator.
3. Remove the plug (if installed) from the larger cord grip to allow installation of the Ethernet WLAN antenna.
4. If Installing WLAN:
   - Carefully screw the included antenna onto the end of the white RF cable.
   - Set VR SEL jumper to **6V** position
   - Set SW1 to **Xcvr** position
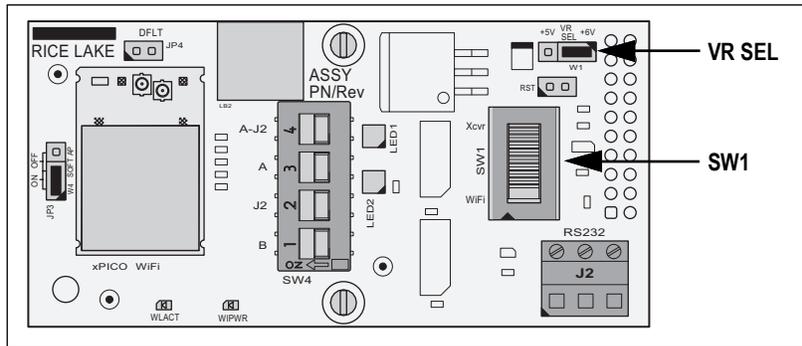
Figure 2. WLAN Board SW1 and VR SEL Locations

5. Install the two plastic standoffs into the two holes on the indicator's CPU board located approximately 1.5 inches to the left of J5.
6. Carefully align the Ethernet/WLAN option card connector with the J5 COMM-OPTION connector on the indicator's CPU board. Ensure that two posts are also aligned with the corresponding holes on the product's CPU board.
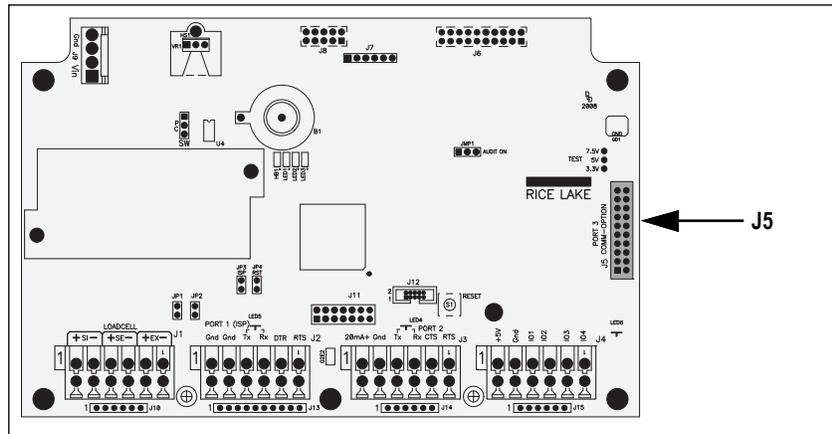
Figure 3. CPU Board J5 Location

7. Press down to seat the card in the connector and on the two standoffs.

8. Perform one of the following:
   A. Install the WLAN antenna:
      A.1 Position the antenna partway through the largest cord grip so it protrudes below the indicator.
      A.2 Connect the RP-SMA side of the antenna cable to the antenna.
      A.3 Connect the u-Fl end of the antenna cable to the Antenna 1 connection on the WLAN card (Figure 4).
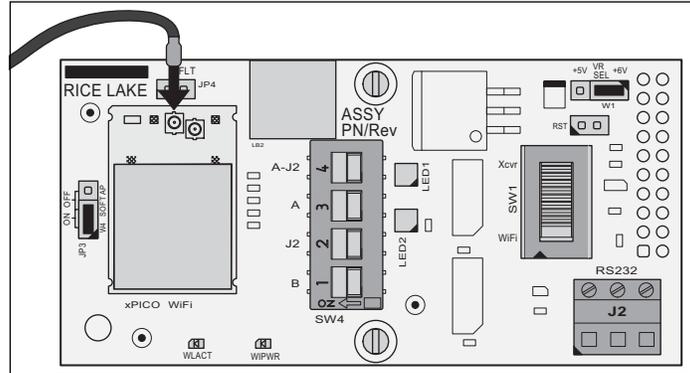
Figure 4. Antenna Connection Location

IMPORTANT: In washdown environments, the antenna joint should not be exposed to the environment to avoid water becoming trapped in the joint. In non-washdown applications, the joint should be exposed and positioned to follow the travel of the indicator's tilt direction. It is recommended to expose as much of the antenna as possible to help with signal strength.

      A.4 Tighten the cord grip around the antenna and torque the cord grip nut (inside enclosure) to 33 in-lb (3.7 N-m) and torque the cord grip dome nut (around cable) to 22 in-lb (2.5 N-m).
   B. Install an Ethernet cable to the Ethernet Card:
      B.1 Insert Ethernet cable through the cord grip.
      B.2 Install Ethernet cable connector after the cord is inserted through the cord grip.
      B.3 Plug the cable connector into the Ethernet option card.
      B.4 Torque the cord grip nut (inside enclosure) to 33 in-lb (3.7 N-m) and torque the cord grip dome nut to 22 in-lb (2.5 N-m).
      B.5 Connect free end of Ethernet cable to network device communicating with computer running WeighVault software (such as a router or switch) or computer running WeighVault software.
3. Reinstall the indicator's cover after configuration is complete.

1.2 Install WeighVault Computer Software

For WeighVault installation and configuration instructions, see *WeighVault for CW-90/90X Technical Manual (PN 212863)*.

2. Configuration

2.1 Configure CW-90/90X

Configuring the CW-90/90X involves navigating the menu system and setting parameter values. For reference Figure 5 displays the menu path of a CW-90/90X to TRIGGE, UID, ID, Type and Port Parameters.
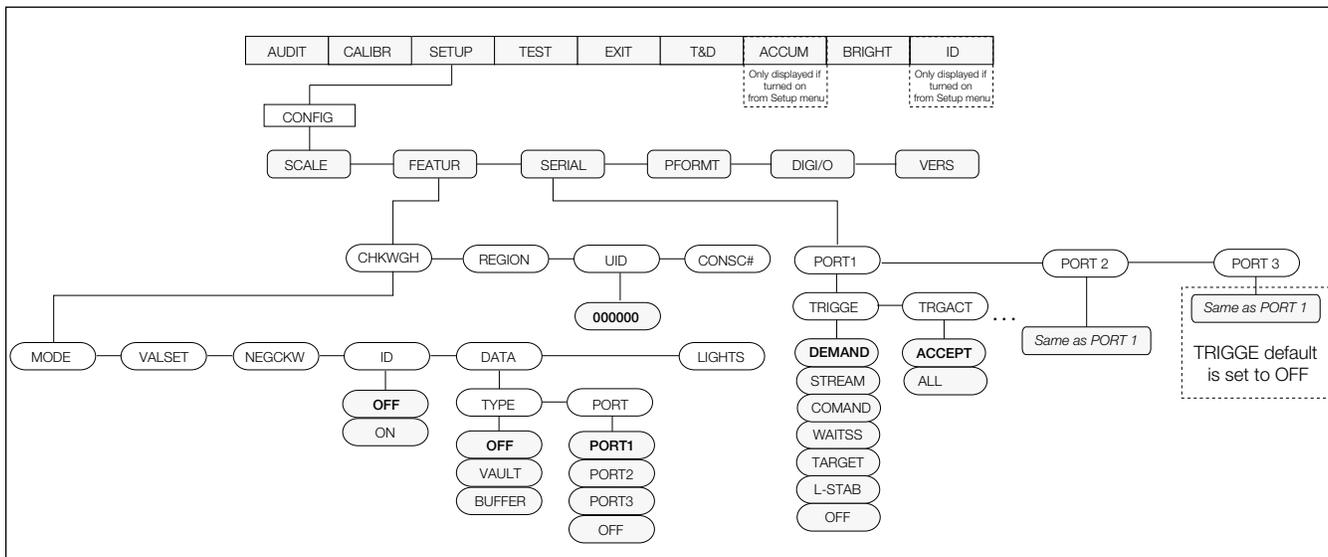
Figure 5. CW-90/90X Menu

Table 2 describes UID, ID, TYPE and PORT parameters.

Parameter	Choices	Description
UID	000000	Sets the unit ID, a string of up to 6 ASCII characters, which can be set via serial port or keypad; This will be used in place of the <UID> token in a print format; The default value is 1
ID	OFF ON	Turns IDs on or off; If IDs are turned off, the ID selection will not appear in the main menu structure
TYPE	OFF VAULT BUFFER	OFF – Disables data buffering VAULT – Enables operation with the WeighVault® PC application BUFFER – Stores (buffers) automatic print data to memory for later retrieval ***NOTE: Type must be configured VAULT.***
PORT	PORT1 PORT2 PORT3 OFF	Selects the port number. PORT1 – External RS-232 to Ethernet/WLAN converter PORT2 – WLAN or external RS-232 to Ethernet/WLAN converter PORT3 – Wired Ethernet

Table 2. ID, UID, TYPE, PORT Parameters

Table 3 describes TRIGGE and TRGACT parameters.

Parameter	Choices	Description
TRIGGE	DEMAND	DEMAND will send information out of the port only when the **Print** key is pressed
	STREAM	Allows a continuous flow of information out of the port
	COMAND	Allows operation of EDP commands, but will not print (DEMAND accepts commands and prints)
	WAITSS	Wait for Standstill Print: Automatically print when the weight is stable above the zero band and within the range set by the Trigger Action parameter. Once a print is performed, the weight must go into motion before it is able to print again.
	TARGET	Target Print: Automatically print the first stable weight that is above the zero band and within the range set by the Trigger Action parameter. Once a print is performed, the weight must go into the zero band (below the Threshold value) before it is able to print again.

Table 3. TRIGGE and TRGACT Parameters

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Parameter	Choices	Description
TRIGGE	L-STAB	Last Stable Print: Automatically print the last stable weight that was above the zero band and within the range set by the Trigger Action parameter. If using Trigger Action = All, once a print is performed the weight must go into the zero band (below the Threshold value) before it is able to print again. When Trigger Action = Accept, once a print is performed the weight must exit the accept range before it is able to print again.
	BARCODE	Handles incoming data as if the ID was just pressed. Numbers are treated as the ID number. The barcode can be composed of only four numbers with a CR. Leading zeros are automatically removed.
	OFF	A setting of OFF will disable the port.
TRGACT	ACCPET ALL	Trigger Action: ACCEPT only triggers on values in the accept range. ALL works with Accept, Under, and Over. **NOTE: TRGACT relates only to WAITSS, TARGET, and L-STAB. DEMAND, STREAM, COMMAND, and BARCODE ignore how TRGACT is set.**

Table 3. TRIGGE and TRGACT Parameters (Continued)

NOTE: The TRIGGE parameter must be set as WAITSS, TARGET, or L-STAB.

See CW-90/90X Technical Manual (PN 105942) for information about parameter configuration.

1. With the Audit jumper in the OFF position, remove the Menu mode button access screw from the bottom of the enclosure.
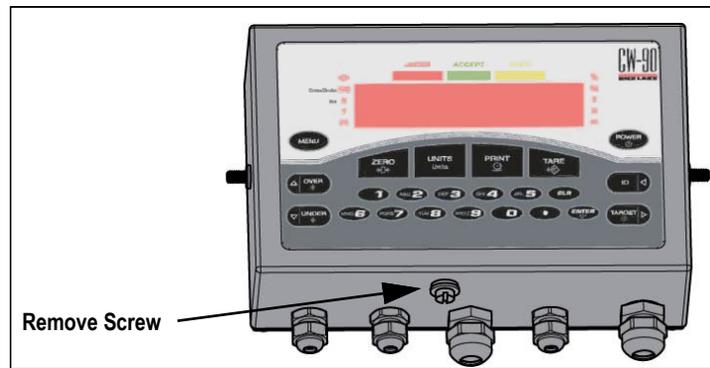
Figure 1-1. Remove Screw from Menu Mode Access Hole

2. Insert a small non-conductive tool into the access hole to press the setup switch to enter Menu mode.
3. Navigate to CONFIG → SCALE → FEATUR → CHCKWGH → **ID**.
4. Press ⬇UNDER. The configured value displays.
5. Press TARGET▷ until **ON** displays.
6. Press **ENTER** to accept the configuration. *Data* displays.
7. Press ⬇UNDER. *TYPE* displays.
8. Press ⬇UNDER. Current parameter configuration displays.
9. Press TARGET▷ repeatedly until **VAULT** displays.
10. Press **ENTER**. *PORT* displays.
11. Press ⬇UNDER. The configured value displays.

12. Press ⬭TARGET⬭ until **PORT1** (external RS-232 to Ethernet/WLAN converter), **PORT2** (WLAN or external RS-232 to Ethernet/WLAN converter) or **PORT3** (wired Ethernet) is set.

13. Press ⬭ENTER⬭. *TYPE* displays.

14. Navigate to DATA → CHKWGH → FEATUR → SERIAL → **PORT1**.

15. Press ⬭TARGET⬭ until the port number previously configured displays.

16. Press ⬭UNDER⬭. *TRIGGE* displays.

17. Press ⬭UNDER⬭. Current parameter configuration displays.

18. Press ⬭TARGET⬭ until the desired parameter displays (see Table 3 on page 4 for descriptions).

19. Press ⬭ENTER⬭. *TRGACT* displays.

20. Press ⬭UNDER⬭. Current parameter configuration displays.

21. Press ⬭TARGET⬭ until the desired parameter displays (see Table 3 on page 4 for descriptions).

22. Press ⬭ENTER⬭.

23. Press ⬭MENU⬭ to exit configuration.

2.2 Configure Multiple CW-90/90X Checkweighers

If using multiple CW-90/90X units on the same network, the UID (Unit ID) on each machine must be set as a unique identification number. This number will be referenced in WeighVault to identify the unit. To set a UID for a CW-90/90X, perform the following:

1. Insert a small non-conductive tool into the access hole to press the setup switch to enter Menu mode.

2. Navigate to CONFIG → SCALE → FEATUR → CHKWGH → **UID**.

3. Press ⬭UNDER⬭. The current configuration displays.

4. Use arrow keys to change **UID** number.

5. Press ⬭ENTER⬭. *CONSCB* displays.

6. Press ⬭MENU⬭ to exit configuration.

2.3 Configure PC or Server

Indicators communicate with the host PC through TCP Port 9090. In order for communication to occur, the indicator's Ethernet or WLAN option card requires the IP address of the host PC. Therefore, the host requires a static (not dynamic) IP address.

If using a network server, request your network administrator for the IP address of the server, and confirm the address is static. If using a PC, refer to the instructions supplied with Windows to help you configure the computer with a static IP address.

🛈 **IMPORTANT: If your host PC or contains a a firewall, it may be necessary to create an exception for TCP Port 9090.**

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2.4 Configure Ethernet Card

The Ethernet option card requires a specific configuration to function with WeighVault. The option card can be configured using a network-based Windows application called Device Installer, available for download from the Lantronix website:
 https://www.lantronix.com/

📝 *NOTE: Detailed configuration instructions are available on the Lantronix website and in manuals provided with the option card.*

Configuration of the Ethernet option card should be performed by someone familiar with computer networking. At a minimum the host PC IP address are host PC subnet are required.

2.4.1 Installing Device Installer on your PC

1. Locate the software called Device Installer from https://www.lantronix.com/.
2. Install the software by following the on-screen instructions.

2.4.2 Ethernet Option Card Configuration

1. Start the Device Installer program. The program searches the network for available Lantronix option cards.
2. Once it finds an option card, select it and perform the following configuration using the Web Browser Configuration Tool:
   - Assign the IP and subnet addresses.
   - Configure the following parameters for Channel 1:
     - Connect Mode to **Connect With Any Character**
     - Remote Port to **9090**
     - Remote Host to the IP address of the host PC or Server that is running the WeighVault service.
     - All other settings should remain default.
3. Click **OK** then **Apply Settings**.
4. Install free end of Ethernet cable to Host PC or network device.

📝 *NOTE: If connection is unsuccessful verify the Connect Mode, Remote Port and Remote Host are configured correctly. Also, verify cables are connected securely and the host PC is powered on.*

2.5 Configure WLAN Option Card (Kit 206272)

The preferred configuration method for the xPico-based WLAN Option is through the WLAN card's built-in Web Manager.

📝 *NOTE: Detailed configuration instructions are available on the Lantronix website and in manuals provided with the option card.*

Configuration of the Ethernet or WLAN option cards should be performed by someone familiar with general computer networking. At a minimum the host PC IP address, Host PC subnet, and network security credentials (if connecting with WLAN) are required.

2.5.1 Wireless Configuration

Configuration of wireless settings is accomplished through the WLAN card's built-in Web Manager. If already connected to a network, a web browser on the same network can connect to the Web Manager by navigating to the WLAN card's IP Address.

If not connected to a network, or configuration through the network is not desired/available, then the Web Manager may be accessed through the WLAN card's Soft AP. By default, the card's Soft AP is available any time the card is powered up.

2.5.2 Soft AP (Access Point) Details

- Name: **RLWS_XXXXXX**
- Password: **PASSWORD**
- Configuration Page: **http://192.168.0.1**

NOTE: The Soft AP only displays as a 5 GHz network. The connecting device must be capable of using the 5 GHz band to connect to the Soft AP.

In applications that don't have a local network to connect to or if the network is not in range, the Soft AP connection can also be used to talk to an indicator using the WLAN Option by connecting to IP 192.168.0.1, port 10001.

2.5.3 Wi-Fi Setup

The following procedure configures the WLAN Option's Wi-Fi network settings using the WLAN card's built-in Web Manager.

NOTE: If required, contact site IT administrator to obtain network credentials and information.

1. Power on the indicator and wait for the WiPWR LED to light solid. See Figure 6 for the LED's location.
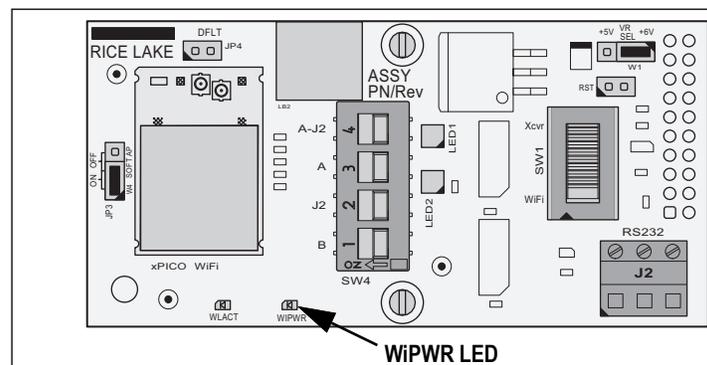
Figure 6. Wi-Fi LED Locations

2. Scan for available Wi-Fi networks using a computer or phone and connect to the Soft AP. Several scans may be required before the Soft AP appears on the device.

3. Connect to the Soft AP withe following credentials:
   - Soft AP Name: **RLWS_XXXXXX**
   - Soft AP Password: **PASSWORD**

IMPORTANT: It is recommended to change default passwords to limit access and for security.

NOTE: The X's of the Soft AP name represent the last 6 digits of the Wi-Fi MAC address. The Wi-Fi Mac address is one number/character greater than the serial number located on the WLAN card.

For example, if the card's serial number is "0080A3E8C27A", the Wi-Fi MAC address is "0080A3E827B", and the SSID is "RLWS_E8C27B". The MAC address is a Hexadecimal value, the letter A follows the number 9, and this continues to F before incrementing the next most digit and returning to 0.
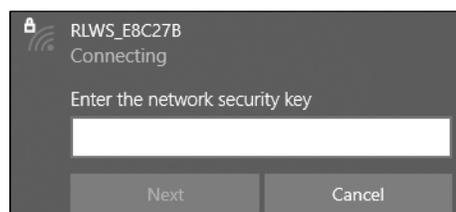
Figure 7. Windows Security Key Prompt

4. Once connected to the Soft AP, use a web browser and enter **192.168.0.1** as the URL and press **Enter**.

NOTE: Once connected to a network, a web browser on same network can connect to the Web Manager by navigating to the WLAN card's IP Address (available on the Status page of the Web Manager).

5. Enter the default login credentials for the Web Manager.
   • Username: **admin**
   • Password: **PASSWORD**

IMPORTANT: *It is recommended to change default password for security.*
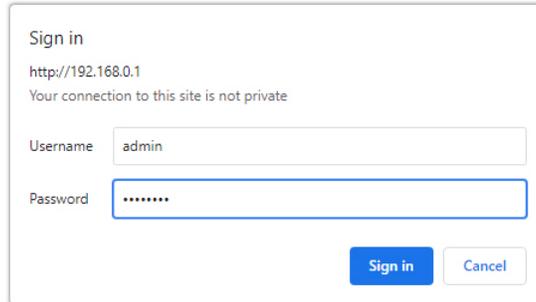
Figure 8. Web Manager Sign in Prompt

6. Select **Sign in**. The Web Manager loads in the browser and the Status page appears.

7. Click **QuickConnect** at the top of the menu column.
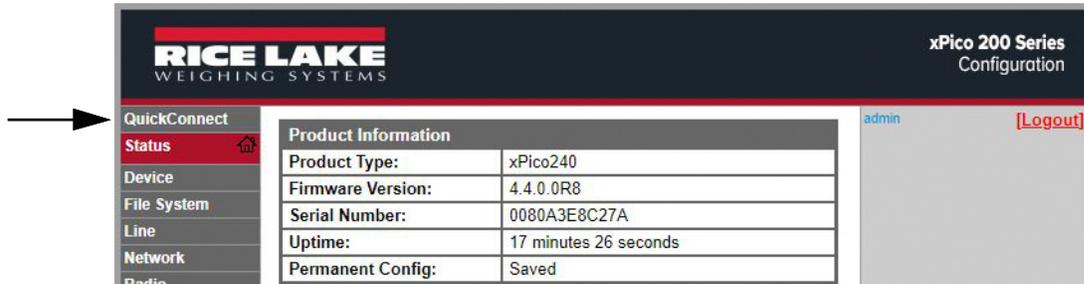
Figure 9. Quick Connect Option

8. A list of wireless networks appear (see Figure 10).

9. Click the network name intended to establish Wi-Fi connection with the WLAN card.

NOTE: *If the necessary network does not display, click the Scan button. It may take several attempts to display the network. If the network is hidden, enter the network name in the box provided.*

Figure 10. Available Networks in Web Manager

10. The wireless network information page appears. Enter the network password (if applicable).
11. Click **Submit** to apply and save the settings.

📝 *NOTE: The Apply button only applies the settings for the current session, but does NOT save them.*
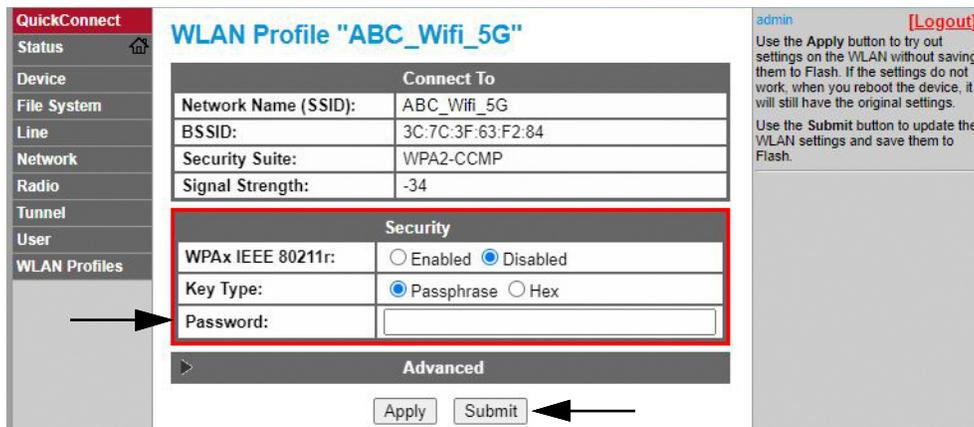
Figure 11. Enter Network Password Credentials in Web Manager

12. A message displays at the top of the page to indicate the new network's Profile saved successfully. It does not necessarily mean it is connected to the network.
13. To verify that the WLAN card is connected to the location's network, click **Status** near the top of the menu column.

Figure 12. Web Manager with Network Profile Information Saved

14. The **Status** page displays network connections on the device under Network Settings.
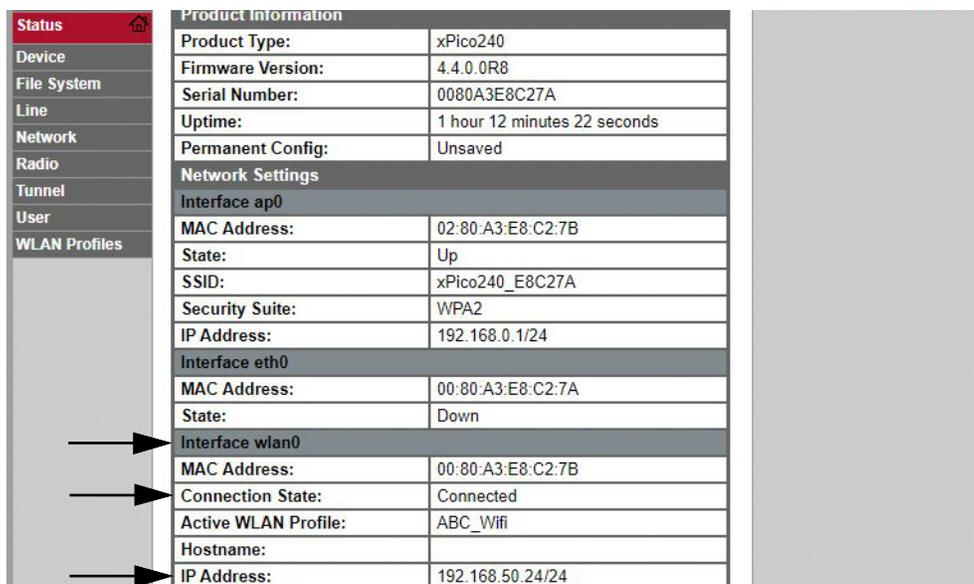
Figure 13. Web Manager Displays Network Connection Details

- If Connected: Interface wlan0 lists Connection State as Connected with the IP Address populated. The WLACT LED on the card also illuminates when connected to a network.
- If Not Connected: Click **WLAN Profiles** at the bottom of the menu column to change the network settings and try again.

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2.6 Set WLAN as Client

The WLAN card is configured to be a server by default, with the ability to accept the connection of a client to it. The card must be configured as a client in order to connect to the IP Address and Port number of the PC running WeighVault. The following procedure demonstrates configuring the WLAN card as a client using the Web Manager.

1. Click Tunnel in the menu column.
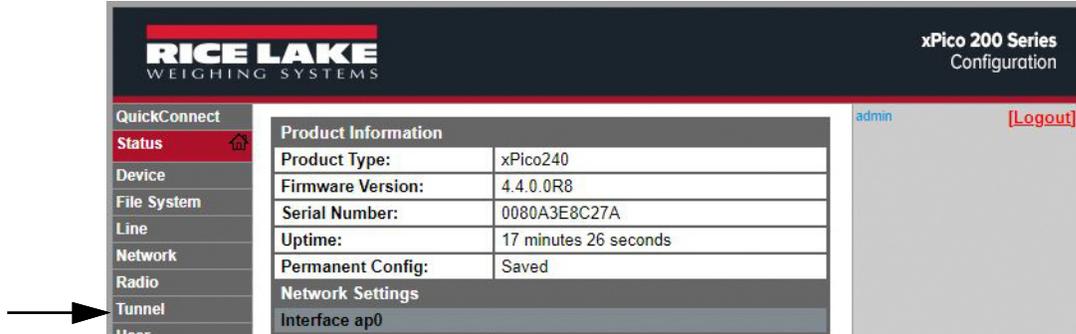
Figure 14. Web Manager with Tunnel Option Identified

2. Click **Connect** toward the top of the Tunnel 1 Status page.
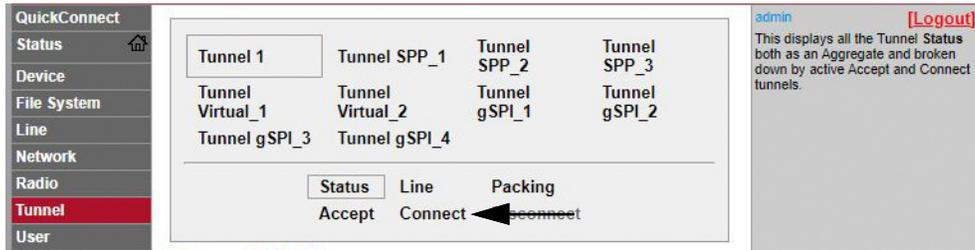
Figure 15. Web Manage with Connect Option Identified

3. Use the drop-down menu to change the **Mode** setting then click **[Edit]** to display available *Host 1* settings.

NOTE: The Web Manager provides information related to the current page in the right column. Descriptions for options and settings are also provided when hovering the cursor over an item.
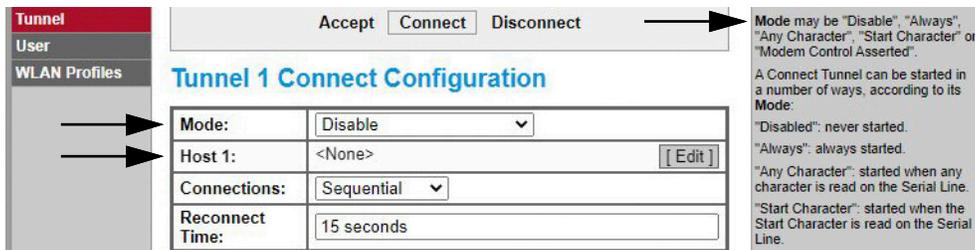
Figure 16. Web Manager with Mode and Host 1 Identified

4. Set the **Address** as the IP address of the host PC or server with the WeighVault running.

5. Set the **Port** as 9090.
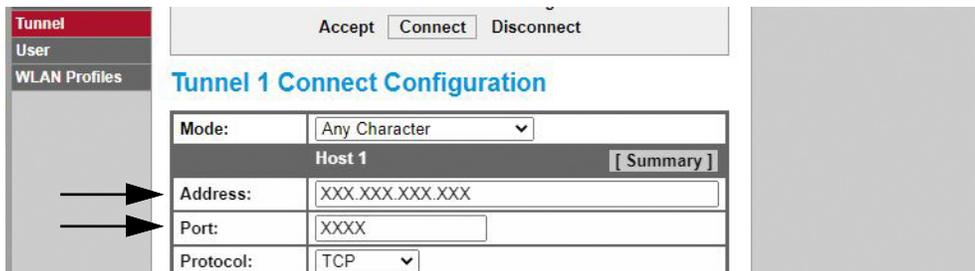
Figure 17. Web Manager with Address and Port Identified

6.   Click **Submit** at the bottom of the page to apply and save the settings. A message displays at the top of the page to confirm the changes have been saved permanently.

> **NOTE: While the WLAN card's server is still available, it is necessary to adjust the server and client mode settings to allow both to function in unison. Even though a device can be set up for both, typically it is only set up as one or the other. Refer to the xPico 200 Series User Guide at www.lantronix.com for more information.**

2.7 Configure RS-232 to Ethernet or WLAN converter

Rice Lake Weighing Systems does not directly support third-party RS-232 to Ethernet or WLAN converters. If used, the converter must be configured using the manufacturer's instructions. The RS-232 settings must match the device setup to initiate a TCP connection to Port 9090 on the WeighVault host any time data is presented by the CW-90/90X on the RS-232 side.

After a short period of LAN inactivity, the host will terminate the connection, the converter must re-initiate the connection anytime the CW-90/90X requests an ID or transmits weighment data.

3. Using WeighVault

The CW-90/90X WeighVault system should now be ready to use.

1.   Start WeighVault and access the Data section to add an ID to the database. For WeighVault operation instructions, see *WeighVault for CW-90/90X Technical Manual (PN 212863)*.

2.   On the CW-90/90X, attempt to recall that ID by pressing the ID key, entering the ID number, and pressing **Enter**.

3.   The CW-90/90X will scroll a message stating it is loading the ID.

4.   Depending on connection status the CW-90/90X will:

   • Display the message *Loading ID from PC* if connection is successful.

   • Display the message *No ID* or it loads the ID from local memory (if programmed). If unsuccessful, verify all settings in the CW-90/90X, option card, and host PC. Also verify if firewall blocking access to port 9090 of the host, and that all wiring is correct.

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