Intellian

CNX Installation and Operations Guide

Serial number of the product

This serial number will be required for all troubleshooting or service inquiries.

Intellian

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Disclaimer

The information in this user guide is subject to change without prior notice out the product life cycle. The printed version of the guide is periodically updated, but it may contain inaccuracies or omissions compared to the most recent product information. The most up-to-date information is always available on our website at intelliantech.com.

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Safety Measures

Read this Installation Guide carefully before you begin the installation. Review the safety warnings and setup instructions each time in case there are changes. Failure to do so could result in serious injury or inoperability of the terminal.

Antenna and CNX-M installation must be provided by a trained professional installation technician or by a qualified antenna installation service. Installation is not to be attempted by someone not trained or experienced in this type of work.

Dangers, Warnings, Cautions, and Notes

DANGER, WARNING, CAUTION, and NOTE statements are used throughout this manual to emphasize important and critical information. You must read these statements to help ensure safety and to prevent product damage. The statements are defined below.

⚠ DANGER	DANGER indicates a potentially hazardous situation that if not avoided, will result in death or serious injury.
⚠ WARNING	WARNING indicates a potentially hazardous situation that if not avoided, could result in death or serious injury.
⚠ CAUTION	CAUTION indicates a potentially hazardous situation that if not avoided, could result in minor or moderate injury or damage to equipment. It may also be used to alert users about unsafe practices.
NOTE	NOTE statement is used to notify people of installation, operation, programming, or maintenance information for advisory messages concerning possible property damage, product damage or malfunction, data loss, or other unwanted results—but not personal injury.

General Safety Measures

⚠ CAUTION

Do not connect the power supply to the CNX-M or connect the power supply to a power source until you are instructed to do so.

⚠ CAUTION

Do not put heavy objects on the equipment to avoid crushing the equipment or reducing the heat dissipation efficiency.

⚠ WARNING

The CNX-M can expose you to BPA, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warning.ca.gov.

Chapter 1 Introduction

1.1 CNX-M Overview

Intellian's Customer Network Exchange (CNX) units are a critical component of any OneWeb user terminal installation, providing both the power and data connectivity to the outdoor unit, and the connectivity to customer equipment and networks. CNX-M variants are offered for specific deployment scenarios including Land Fixed, Land Mobile, and Maritime. CNX-M is an abbreviation for CNX-Mobility.

Figure 1: CNX-M

1.2 Before you Begin

- This guide is intended for professional installers.

- Have all the required items required for the installation including all the equipment and required tools.
- Check the packing list for all the parts.

1.3 Summary of Tasks

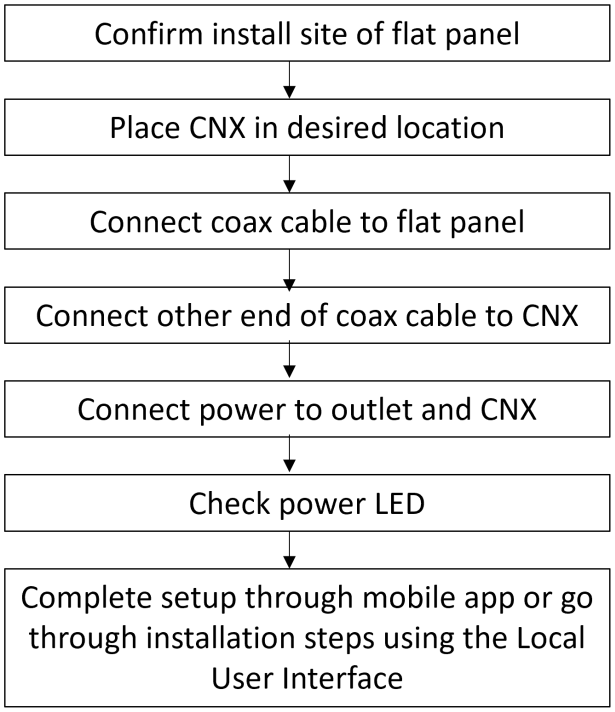

Figure 2: Summary of Tasks

Chapter 2 Installing CNX-M

This chapter describes the what will be needed for installing the CNX-M and identifies the parts of the CNX-M .

2.1 Check the Packing List

Item	Qty.	Size	Description
Customer Network Exchange (CNX-M)	1	33.8mm x 207mm x 46mm.	Indoor unit used to access OneWeb services

Figure 3: Package items

2.2 Connect the System

2.2.1 Confirm installation site

- The CNX-M should be in a clean, dry area where it can be placed vertically.
- Ensure there is adequate space around the CNX-M for cooling.

2.2.2 Position the CNX-M

- Place the CNX-M in its desired location.
- The CNX-M must be placed vertically for optimal performance.

⚠ CAUTION Placing the CNX-M in any other position than vertically may result in overheating.

2.2.3 Connect power cable

- Plug the appropriate power cable (AC power cord (NEMA 5-15P) or AC power cord (CEEE7/7)) into the power adapter.

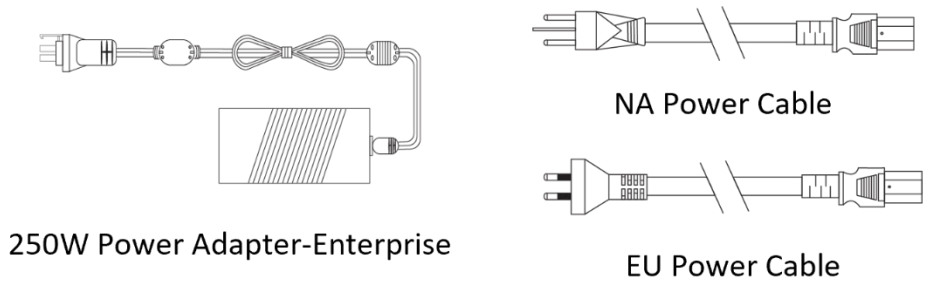

Figure 4: Connect Power Cable

2.2.4 Connect coax cable to the coax port on the CNX-M

Note: The coaxial cable has already been connected to the antenna.

- Ensure the coaxial cable connection is at least finger tight.
- Ensure the cables are not subjected to excessive tension or in a tight bend radius.

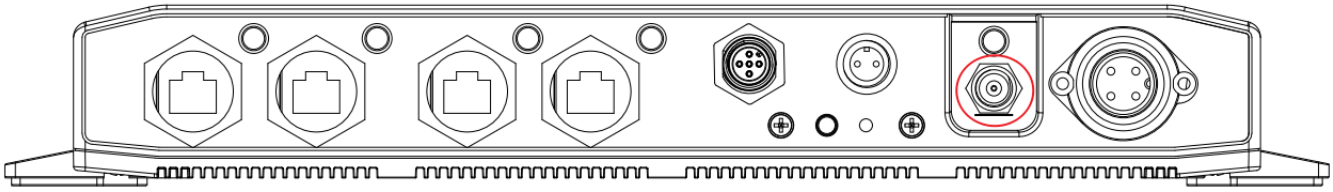

Figure 5: Connect Coax Cable

2.2.5 Connect power

- Connect one end of the power supply unit to the electrical outlet and the other end to the CNX-M.
- It is recommended that the power adapter is plugged into the outlet before plugging the power cable into the CNX-M.
- The power connector can only be plugged into the CNX-M one way. The locking pin is on the left side.

- Ensure the cable is not subjected to excessive tension or in a tight bend radius.

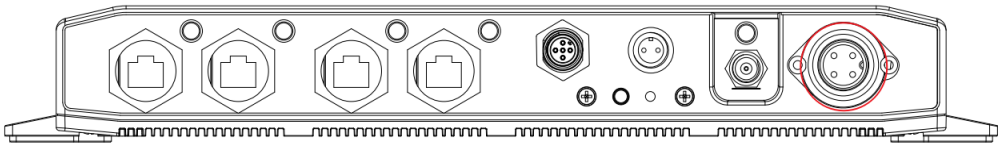

Figure 6: Connect Power

2.2.6 LED Light Indicators

- Check if the blue power LED on the top is working correctly as described Table 1: LED status on page 17.

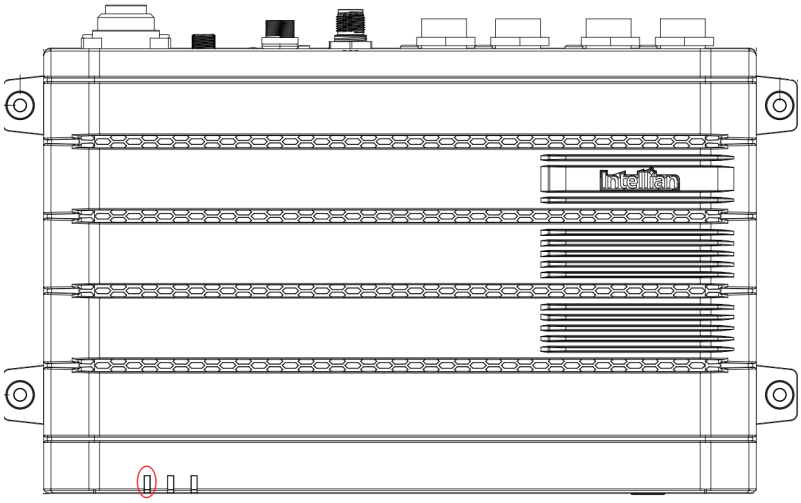

Figure 7: CNX-M Power LED

2.2.7 CNX-M LUI

- Connect to the CNX-M LUI with one of the following options.
- Use the Wi-Fi feature to connect from the laptop.
- Using a CAT6 cable to connect the MGMT LAN port with the laptop.

2.3 Antenna system configuration CNX-M

For the proper operation of your satellite communication system, it must be connected with all the provided components as shown in the Figure 8: Antenna system configuration.

The basic UT system consists of the antenna and CNX-M.

The antenna includes the SSM Module, which controls and manages the antenna systems simultaneously.

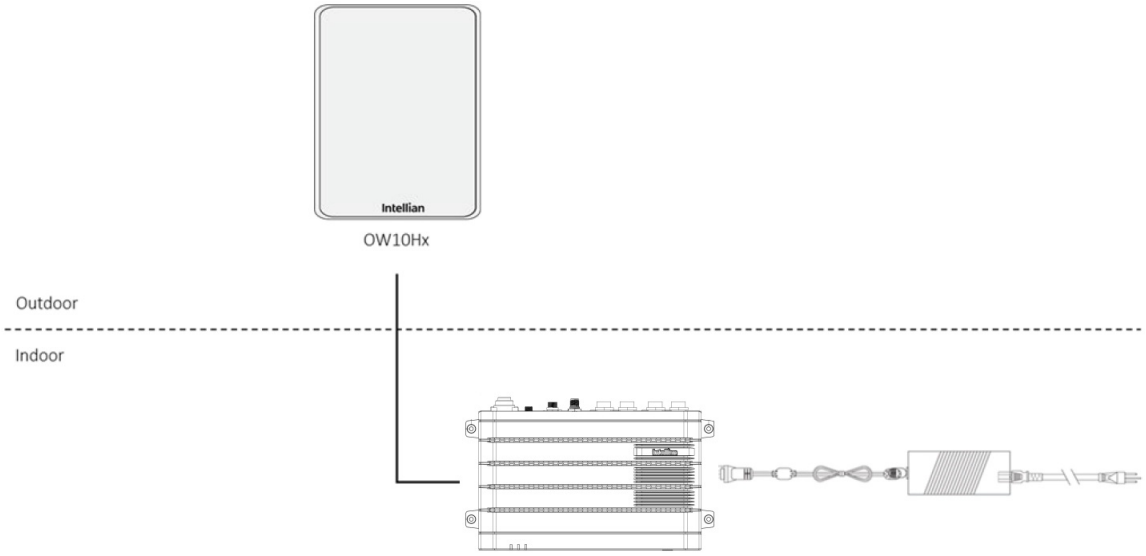

Figure 8: Antenna system configuration CNX-M

2.5 CNX-M Front and Back Panels

During the installation process and use, it is important to know the parts of the CNX-M. The front panel displays the Wi-Fi and WAN indicators lights. They will light up blue when engaged and used to check the connection status with the LED indicators on the front and back panel of the CNX-M.

2.6 Check LEDs

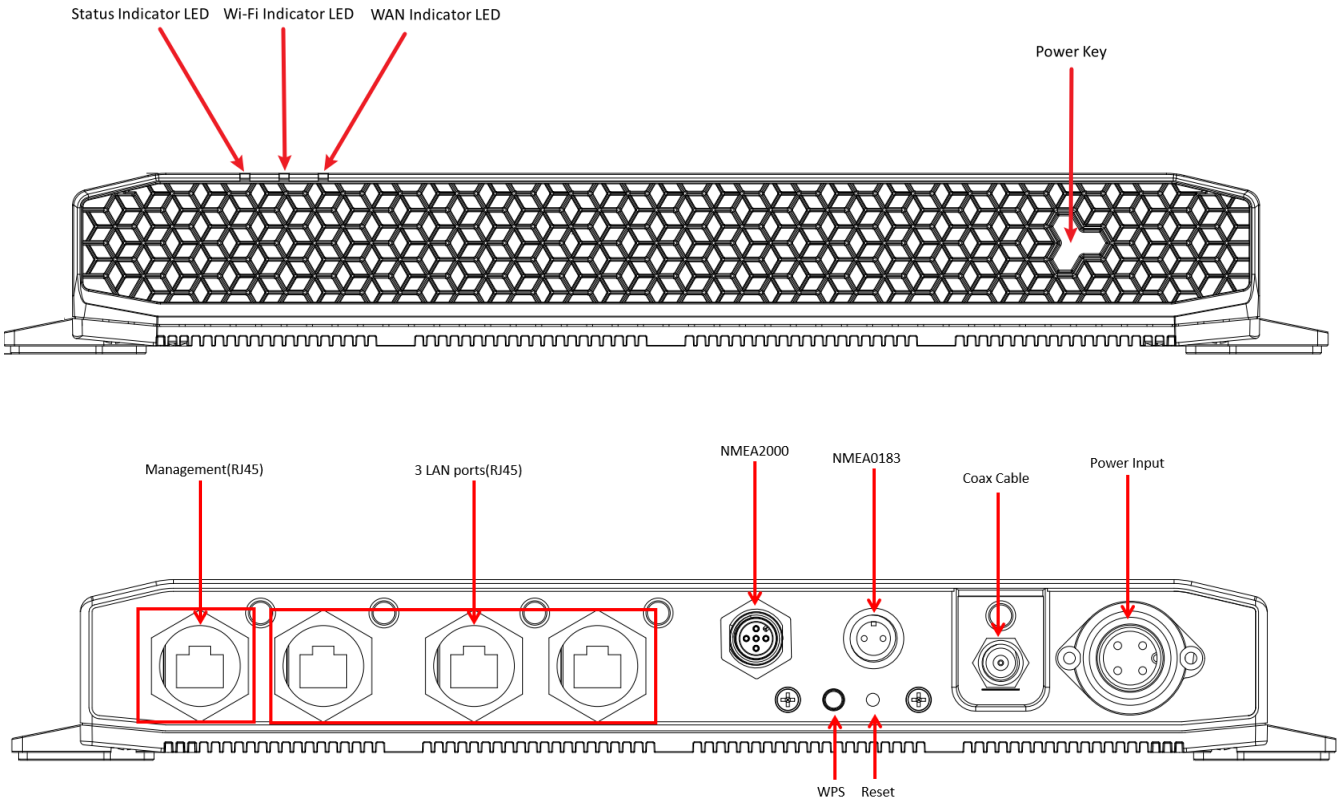

Figure 10: Front and back panels of CNX-M

The following table shows the status indicators and buttons for the CNX -WIFI.

Item	Light Output	Description of status/function
Front Panel		
Status Indicator LED	Off	No Power
	Solid Blue	Connected to power supply
	Solid Red	Fault Condition
WIFI6 Indicator LED	Off	5G and 2.4G Disabled
	Blinking Blue	Data Activity
	Solid Blue	5G or 2.4G Enabled
WAN Indicator LED	Off	Coaxial Port Disconnected
	Blinking Blue	Data Activity
	Solid Blue	Coax Port Connected, but no data activity
Back Panel		
RJ45 LED	Off	RJ45 Port Disconnected
	Blinking Blue	Data Activity
	Solid Blue	RJ45 Port Connected, but no data activity
WPS Button	Press WPS button	Ongoing/active WPS process
Reset Button	Press more than 5s	Reset the default configuration
Coaxial Port	Port	Coaxial cable F(M) - F(M) for CNX-M power and data connection
Power Input	Port	To convert AC 100-240V power to DC +56V power for CNX-M
NMEA2000	Port	To NMEA2000 signal input
NMEA0183	Port	To NMEA0183 signal input

Table 1: LED status

Chapter 3 Managing the Networks (SSID)

The username, password, and SSID information are on a label on the bottom of the CNX-M. The MGMT network does not have a password.

There are two work modes. The CNX-M is in Bridge work mode by default. Use the Bridge mode when only the management network is being used. The Router mode is used if the CNX-M is its own router, and no additional equipment is needed. This enables APN1 and APN2, and LAN1 and LAN2.

There are three networks and two frequency options of each, 2.5 GHz and 5 GHz. One network is the management network and the other two are APN1 and APN2. Devices will automatically jump between 2.4 GHz and 5 GHz without any necessary work and end users will only see one APN.

- Type in **192.168.100.3** in the web browser.
- Set Password at first login in, and type in the password and select Login

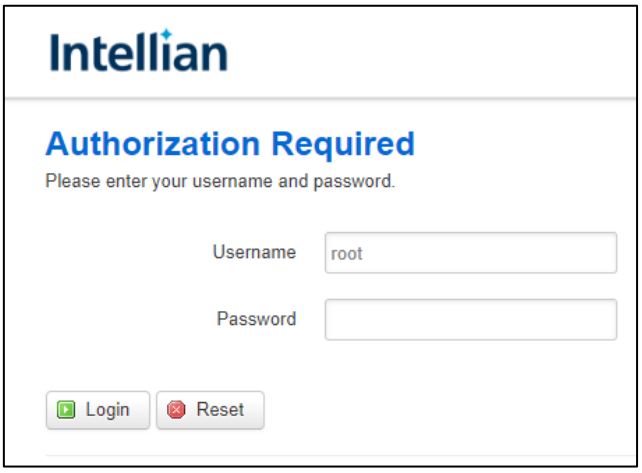

Figure 11: Login

- The main page will display.

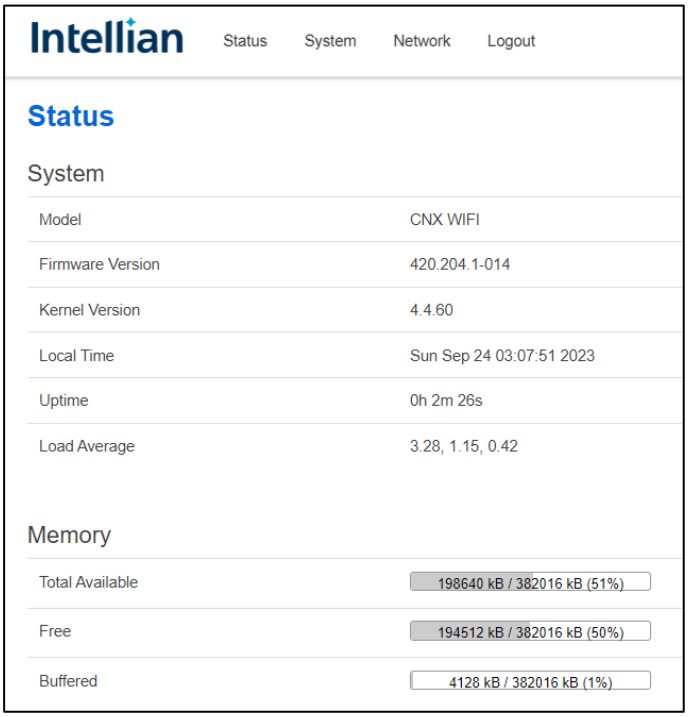

Figure 12: Main Page

- Go to **Network > Work Mode** to select the appropriate mode.

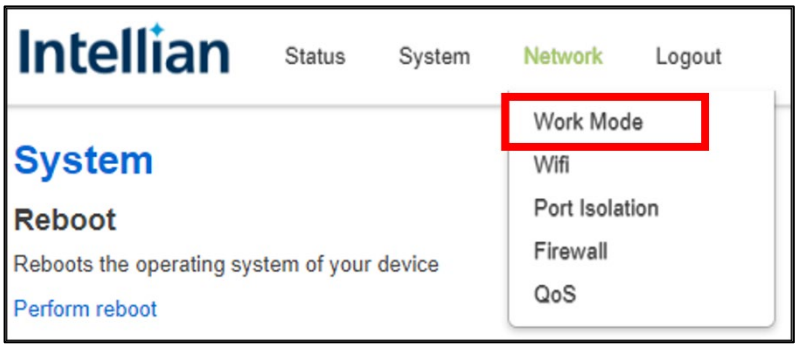

Figure 13: Work Mode Menu Option

- From the Work Mode Setting page, select either **Router** or **Bridge.** By default, it will be in **Bridge** work mode. If you change the setting, select the **Save and Apply** button.

- Go to **Network > Wi-Fi** to edit the ports.

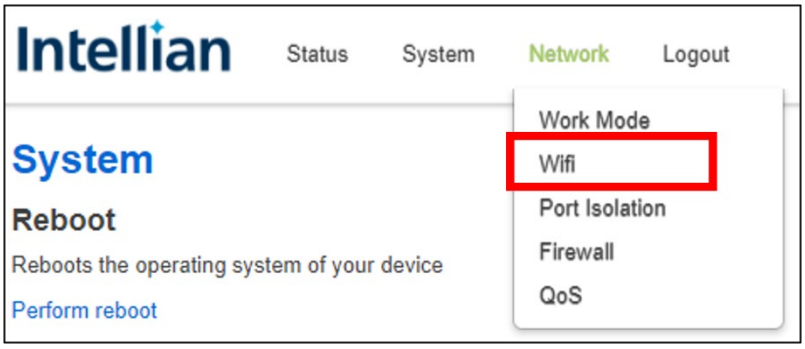

Figure 14: Wi-Fi Menu Option

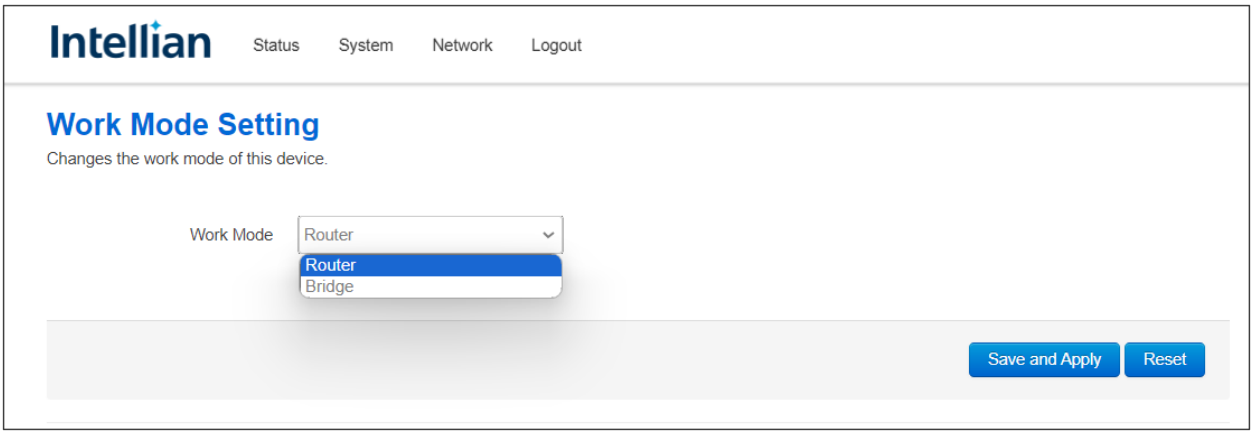

Figure 15: Work Mode Setting Page

- The Wireless Overview page will display. The first section is for the 2.4 GHz frequency and the second section is for the 5 GHz frequency.
    - The broadcast networks (APN1 and APN2) are highlighted.
    - The variables that should be changed for the broadcast networks are **name** and **password**.
    - Whatever changes made to the 2.4 GHz frequency must be made to the 5 GHz networks.

- When any changes are made, the networks will be unavailable up to 4 minutes during the update.

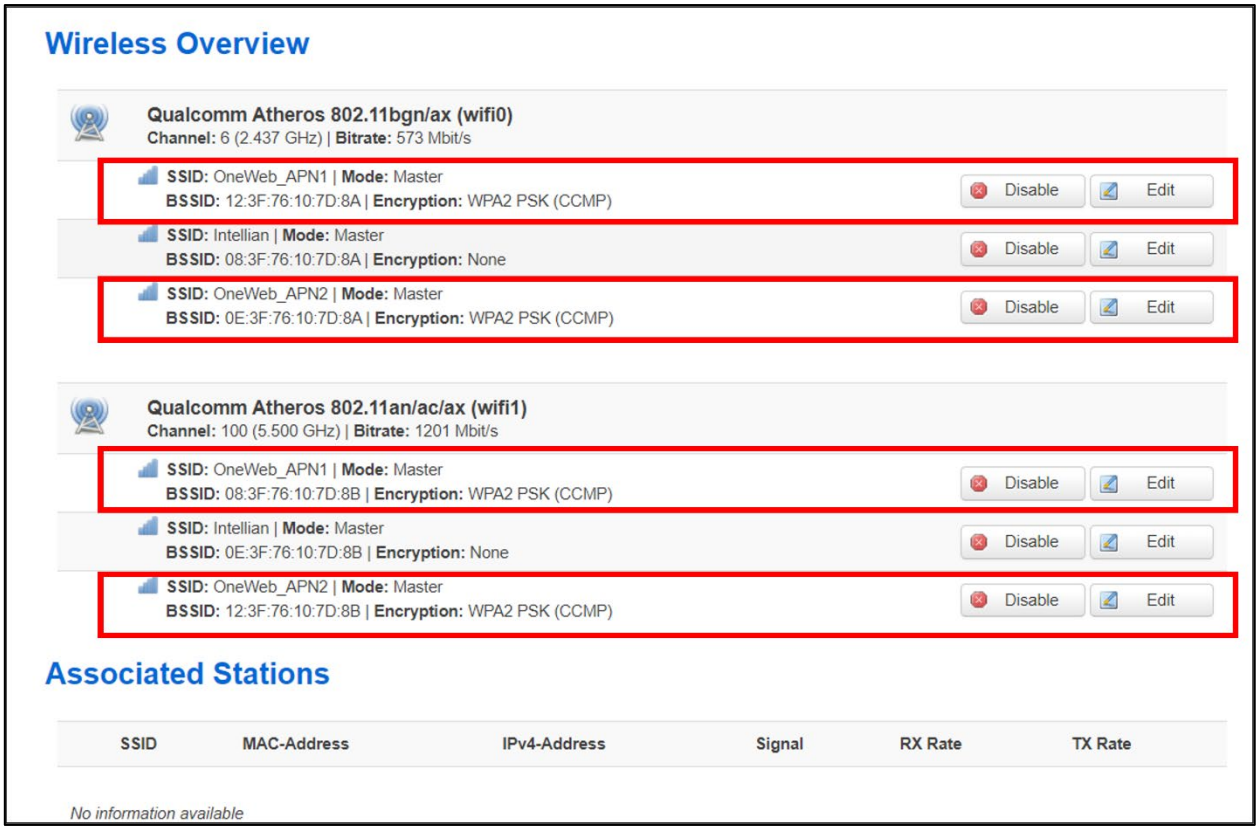

Figure 16: Broadcast Network Options

- Select the Edit button to make changes.

Figure 17: Network Edit

- In the Interface Configuration section on the General Setup tab, type in the new name in the **ESSID** field. For example, it could be renamed guest or staff.

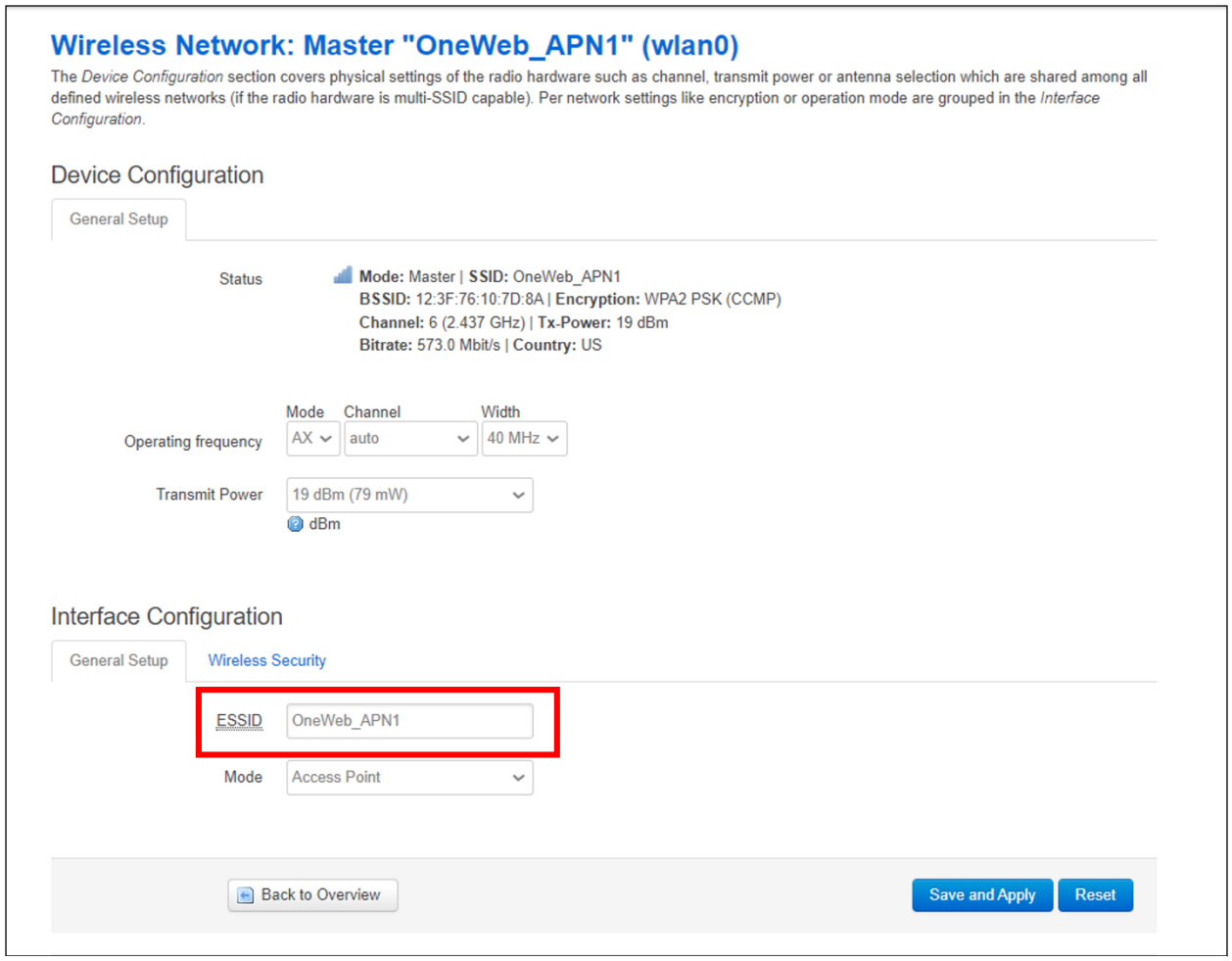

Figure 18: Network Name Change

- In the Interface Configuration section on the Wireless Security tab, type in the new password in the **Key** field. By default, it will be the password on the label on the bottom of the CNX-M.

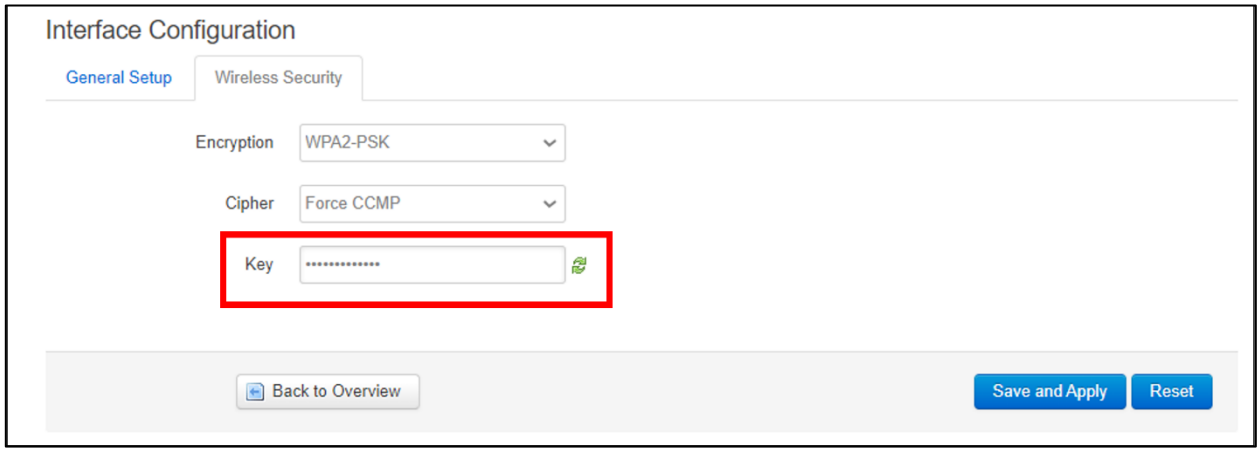

Figure 19: Password Change

- Once the name and/or password has been updated, select the **Save and Apply** button.

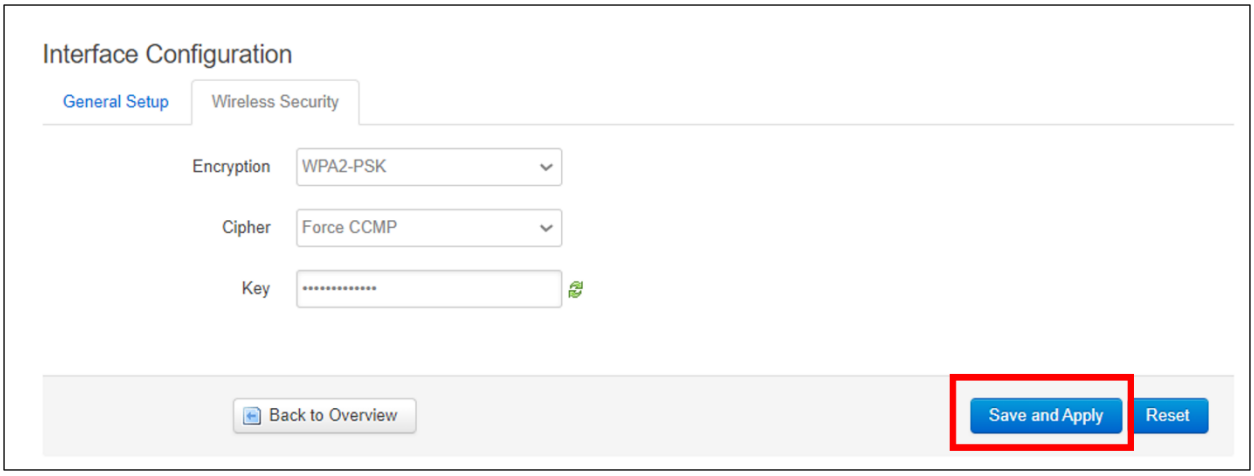

Figure 20: Save and Apply Changes

Each network can be enabled or disabled. It is recommended that the wireless management networks be disabled because there are no passwords, and the work mode set to **Router**. An ethernet cable can also be connected to the LAN1 and/or LAN2 ports on the CNX-M .

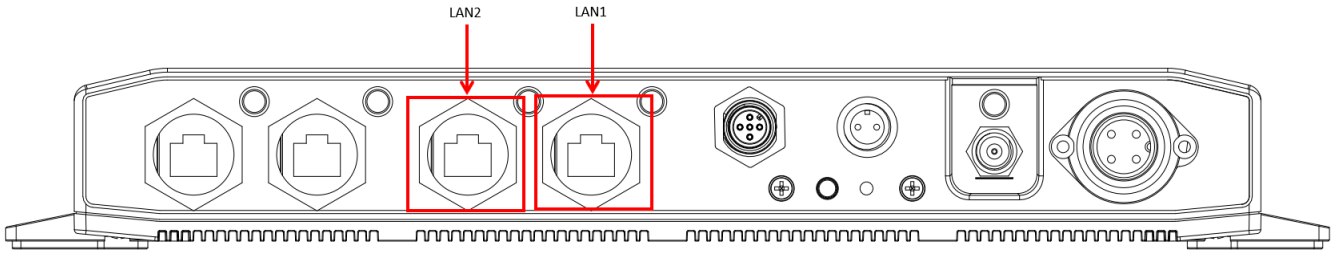

Figure 21: LAN1 and LAN2 Ports

Chapter 4 Technical Specifications

4.1 Technical Specifications CNX-M

Dimensions	338mm x 207mm x 46mm
Weight	1.7 kg
Power	20 W. (max), 8 W. (avg.)
Operating temperature	-20°C to +55°C
Data Interface	Wi-Fi 6
Power Input	56VDC, 8A
Ingress	TBD
Power Ouput	56VDC, 7.6A

4.2 Equipment label

Figure 51: CNX-M label

4.3 Maintenance

- Keep CNX-M unit free of dust as much as possible
- Dispose of the unit following the local recycling rules and regulations

FCC Caution:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.

ISED Warning

Operation of 5150-5350 MHz is restricted to indoor use only.
This device complies with Innovation, Science, and Economic Development Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:
(1) this device may not cause interference, and
(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le fonctionnement de 5150-5350 MHz est limité à une utilisation en intérieur uniquement.
Le présent appareil est conforme aux CNR d' Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
(1) l'appareil nedoit pas produire de brouillage, et
(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The device is compliance with RF exposure guidelines, users can obtain Canadian information on RF exposure and compliance.The minimum distance from body to use the device is 20cm.
Le présent appareil est conforme Après examen de ce matériel aux conformité ou aux limites d’intensité de champ RF, les utilisateurs peuvent sur l’exposition aux radiofréquences et la conformité and compliance d’acquérir les informations correspondantes. La distance minimale du corps àutiliser le dispositif est de 20cm.