Intellian

Flat Panel Enterprise Series Installation User Guide

Serial number of the product

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

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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.

Table of Contents

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.

Installation must be performed by a trained professional installation technician or by a qualified antenna installation company. 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

Before you use the antenna, make sure that you have read and understood all the safety requirements.

	THIS WAY UP • Place the boxes/crates on the floor with the arrow pointing up.
	FRAGILE • The antenna's radome is fragile, handle it with care. Do not apply excessive pressure or shock. These may cause surface cracking or other damage.
	KEEP DRY • Always make sure the equipment is stored on a dry floor. • Keep the antenna in a dry place with sufficient ventilation. Do not store the antenna wrapped in a tarp, tent, vinyl, and others.
	HANDLE WITH CARE • Handle carton with care.
	STACKING HEIGHT • The number of boxes that can be safely stacked is three.
	USE NO HOOKS • Absolutely no hand hooks should be attached to pull the parcel.

- Review the general safety measures
- Familiarize yourself with the antenna and mounting instructions prior to climbing any roof or ladder.
- Verify that all safety measures for outdoor or rooftop installation are arranged.
- Verify all requirements before beginning the actual installation to determine if the equipment and necessary items are available and functioning properly.
- Before you begin a site installation, check the appropriate electrical code requirements and other regulations governing this kind of installation within the country of use.
- When installing, replacing, or disconnecting any cable components, ensure that the antenna is grounded correctly before beginning the work.
- Avoid installing antennas near high voltage overhead cables or similar.
- Do not ship by rail.
- Install the grounding system for the antenna and support structure before installing the outdoor unit and before connecting the coaxial cable to the CNX. This protects the system against lightning strikes during installation.
- The outdoor antenna and antenna cables are electrical conductors so transients or electrostatic discharges may occur at the antenna during thunderstorms. If the antenna is not installed properly, the

electronic equipment may be damaged and/or cause personal injury or death to persons touching the exposed metal connectors of the electronic equipment.

- Do not touch antennas or antenna cables during a thunderstorm.
- The outdoor unit (ODU) must be properly mounted and secured to the mount. An improperly installed ODU could result in detachment of the unit which could cause disruption in the unit's operation or could result in serious injury or death from a falling unit.
- When installing the antenna:
    - o DO NOT use a metal ladder.
    - o DO dress properly: wear rubber gloves, shoes with rubber soles and heels, and a long-sleeved shirt or jacket.

⚠ **CAUTION**   Do not connect the power supply to the CNX 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-WIFI 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   Introduction to OW11Fx

The OW11Fx is an electronically scanned array (ESA) user terminal (UT) which can be operated in the OneWeb low earth orbit (LEO) satellite constellation. The OneWeb communications network comprises terrestrial gateways positioned around the globe communicating with OneWeb user terminals. A radio link to the satellites is established using the UT operating in the Ku-band.

The Enterprise series consists of three product variants, the OW11FL (fixed land), the OW11FM (maritime), and the OW11FV (land mobility). The UTs provide network and internet access via the OneWeb network.

1.2   OW11Fx Features

- Full-duplex active electronically scanned array.
- Field-of-view: ±70° Elevation from zenith, 360° azimuth.
- Receive nominal Gain-over-Temperature (G/T): 10.7 dB/K at boresight.
- Transmit Effective Isotropic Radiated Power (EIRP) supports OneWeb's dual carrier requirement (+36.6 dBW).
- Supports data rates up to the maximum allowed by the OneWeb network and the UT modem.
- Dual GNSS receivers provide differential GPS location to support automated true north calibration and highly accurate timing reference.
- The KIM (kinetic inertial module) provides tilt measurement to aid in the installation.
  - This feature aids in the installation of the OW11Fx series as well as supports mobility use cases for the OW11FM and OW11FV.
- Efficient enclosure profile for aesthetics as well as functional rain and snow shedding radome.
- The indoor CNX feeds power and data over a single IFL coax cable for easy installation.
- CNX-WIFI IDU has four Integrated GigE ports in addition to a Wi-Fi 6 access point.
- User friendly Intellian Mobile Application simplifies installation, maintenance, and troubleshooting.
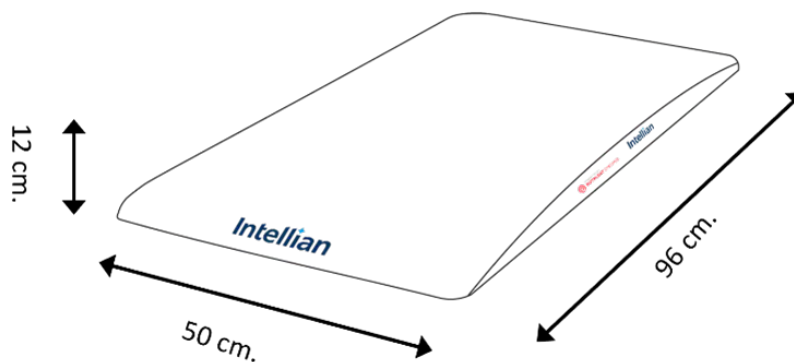

Figure 1: Antenna Dimensions

1.3 Technical Specifications

OW11Fx

Dimensions	96 cm. x 50 cm. x 12 cm. (37.8 in. 19.7 in. x 4.7 in.)
Weight	19.3 kg (42.5 lb.)
Power	340 W. (max)
Operating temperature	-40°C to +55°C (-40°F to 131°F)
G/T	10.7 dB/K
EIRP	+ 33.6 dBW (single carrier) +36.6 dBW (dual carrier)
Field of View	+/- 70° from zenith 360° azimuth
Ingress	IP66
Interface	F-type conn

CNX-WIFI

Dimensions	21 cm. x 17 cm. 8 cm (8.3 in. x 7in. x 3 in.)
Weight	0.6 kg. (1.3 lb.)
Power	18 W (max) / 8 W (typ)
Operating temperature	0°C to +40°C (32°F to 104°F)
Data Interface	Wi-Fi 6 4 Gig-E RJ45 ports
Power Options	Universal AC PSA (100 – 240VAC) 12-24VDC Converter
Ingress	IP44

1.4 Antenna System Configuration

For the proper operation of your satellite communication system, the UT must be connected with all the provided components as shown in the figures below.

The basic UT system consists of the antenna, the CNX and the associated power supply.
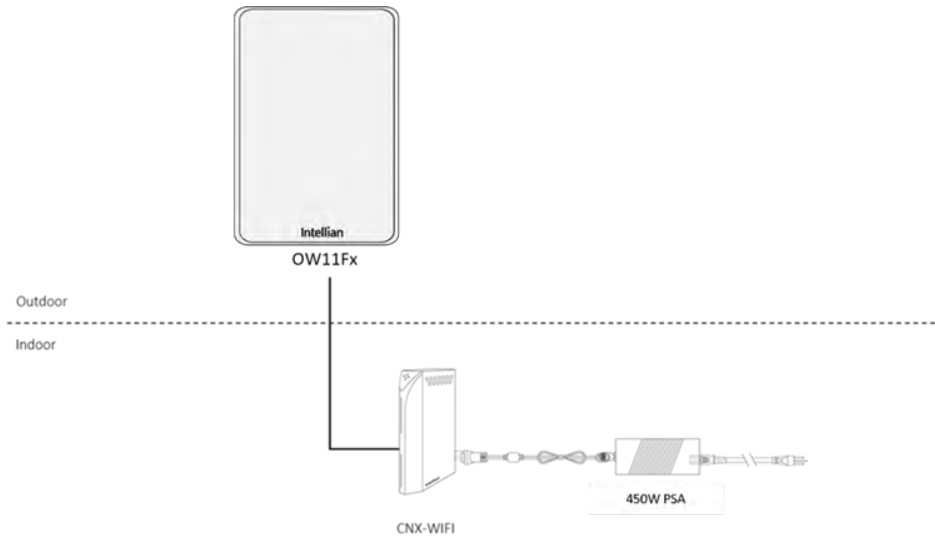
1.4.1 AC Power System Configurations

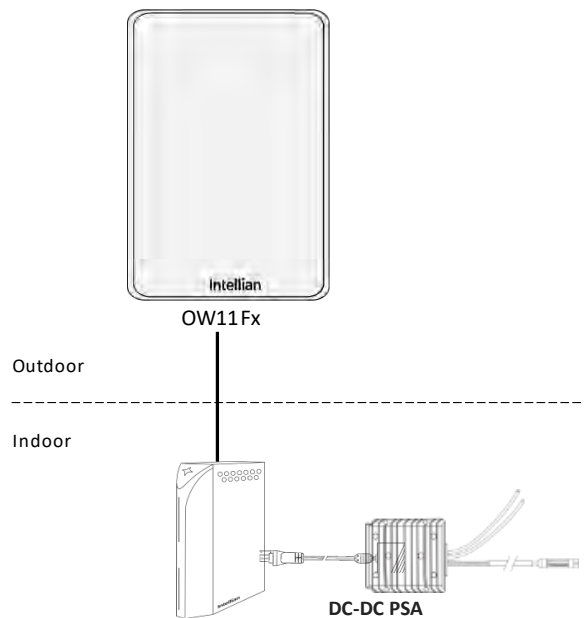Figure 2: AC Power with CNX-WIFI

1.4.2 DC Power System Configuration

Figure 3: DC Power with CNX-WIFI

9

Chapter 2   Installation Requirements

Before initiating the installation, review the following information.

2.1   Mobile app

A mobile app for step-by-step installation, troubleshooting, and monitoring is available on Google Play and the Apple App store via a custom link:

iOS: Intellian - OneWeb: Android: Intellian - OneWeb:

Some key highlights of the Intellian mobile app include:

- Guided installation with step-by-step instructions
- Blockage recognition / tilt check to verify potential installation sites
- Dashboard displays link quality and component health
- Troubleshooting support: Error codes with recovery actions, offline FAQs and knowledge base
- Quick support case registration
- User login / password security

2.2   Installation Safety Measures

The User Terminal installation requires thorough planning and full knowledge of the safety measures that must be followed for the specific installation environment. Failure to follow the correct installation process may lead to the injury of the installer and/or cause damage to the system. To maximize the performance of the system, review this installation guide and execute the installation process as instructed.

To ensure your own safety and effectively complete the installation, carefully review the safety measures from the General Safety Measures section on page 6.

2.3   Selecting Installation Site

⚠ CAUTION   Be sure to complete the pre-installation checklist <u>before</u> you begin installing the antenna.

Before installing the antenna system, consider the best place to position the antenna for both performance and safety. Refer to one of the following:

- Land Fixed Checklist
- Maritime Checklist
- Land Mobility Checklist

2.3.1 Installation Location for Antenna

The antenna should be placed in an area with:

- Safe mounting place
- No radio frequency (RF) signal Interference
- Clear and stable environment

NOTE

When the antenna is transmitting, obstacles in the way of the beam path will decrease the satellite signal strength and interrupt the connection. The antenna unit should have direct line-of-sight within 53 °from zenith (or above 37 °of elevation from local horizon at all directions) without any obstacles in the beam path.

2.3.2 Minimizing Satellite Blockage

The ideal antenna site should have a clear view of the horizon with 360°of Unobstructed view of the sky. For the antenna to operate effectively, avoid blockages. Examples are listed below. To minimize the influence of obstacles, signal interference, or reflections, note the following guidelines:

- Avoid trees in the signal path. Seasonal changes such as leaves or hanging icicles can impact signal absorption. Obstructions for Land Fixed may include neighboring buildings, bridges, trees, or power lines. Obstructions for Maritime may include masts, antennas, or other structures.
- Make sure there are no obstacles within 53° from zenith.
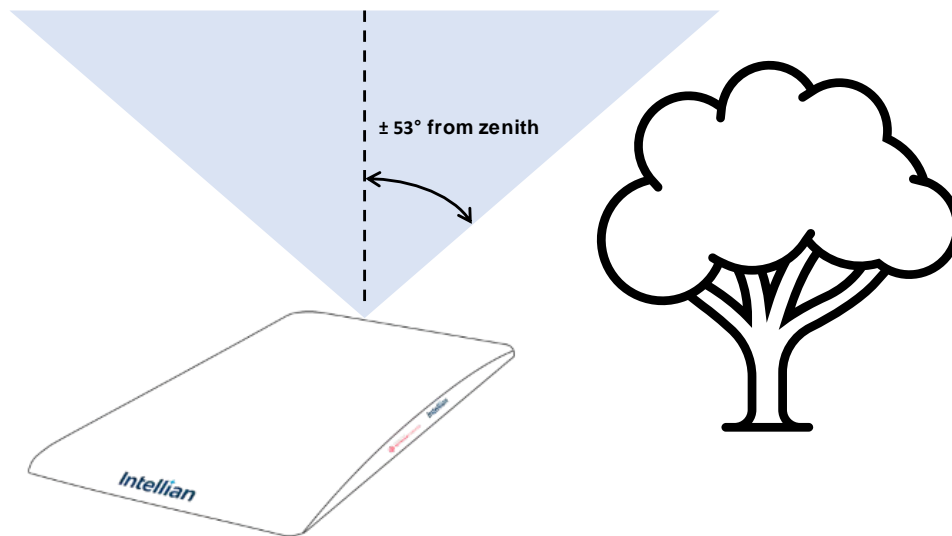

± 53° from zenith

Intellian

Figure 4: Minimizing Satellite Blockage Example

2.3.3 RF Hazard Precautions

The Federal Communications Commission (FCC) has adopted a safety standard for human exposure to RF energy which is below the Occupational Safety and Health Act (OSHA) limits. To comply with current FCC RF exposure limits, the antenna must be installed at or exceeding the minimum safe distance as guided by the antenna manufacturer or supplier.

⚠ WARNING	Exposure to RF energy from the antenna may cause thermal injuries including tissue damage from increased heating and body temperature. Keep everyone (operators, pedestrians), including from windows and doors, at a safe distance from the antenna when the system power is ON.

The value of the table applies to the people in the general population who are in an uncontrolled environment.

RF Exposure for General population/Uncontrolled Exposure

The OW11Fx UT is designed for a sustained 40% Tx duty cycle. However, the operational requirement of the network is <20% duty cycle in all use cases. Using the 47-CFR 2.1091C and FCC OET Bulletin 65, the calculated safe distance for Maximum Permissible Exposure is 20cm from UT radome surface.

2.4 RF Hazard Sticker Placement

The blue RF sticker needs to be placed where it does not impact RF performance. The RF sticker must be placed on the UT assembly.

Figure 5: RF Sticker

2.5 Tools Required

- Grounding system that meets the local electrical code requirements
- Fasteners and other installation tools
    - M8 Allen wrench
    - 12 mm wrench or socket
    - 1/2 " wrench
    - 6 mm hex key
    - 10 mm wrench

2.6   Installation Location for Customer Network Exchange (CNX)

The CNX should be placed:

- In a dry, cool, and ventilated location.
- Within 10 ft. of a power source.

Distance from the antenna is dependent on the cable type used. Refer to Supported Cable Lengths on page 77 for details.

2.7   General Requirements

2.7.1   Antenna Mounting Requirements

Consider the following factors when installing the mount:

- The physical size of the unit is 96 cm. x 50 cm. x 12 cm. (37.8 in. x 19.7 in. x 4.7 in.)
- The weight of the unit is 19.3 kg. (42.5 lbs.).
- The antenna has handles for easy lifting.
- The mounting method should be able to preserve antenna position under wind load and protect safety of life and safety of property.

2.8   Mount Types

Choose the mount that works best for the environment. Go to the instructions for the appropriate mount type. These are the only Land Fixed Mount options available from Intellian.

- Installing Non-Pen Mount (NPM) (OW-NPM5-1074-RM) on page 63
- Installing a TriMast Mount (OW-6012) on page 68
- Installing a Quadpod Mount (OW-6011) on page 70

2.9 Unboxing the UT

Before assembling the UT, set the package down in a level and dry place.

2.9.1 Outdoor Unit

Description (UT Box)	Qty	Specification
OW11Fx Outdoor Unit	1	
Adjustable Mount Adapter	1	Land only (OW11FL)
RG6 cable (5m)	1	
Flexible grounding braid	1	Land only (OW11FL)
Hex bolt_M6_12	4	
Spring washer_M6	4	
Flat washer_M6	4	
Hex-S bolt_SF_M6	4	
OW11Fx QIG	1	
RF sticker	1	

Table 1: OW11Fx Packaging Details

Outdoor Unit

RG6 Cable (5m)

Grounding Braid
Bolt kit
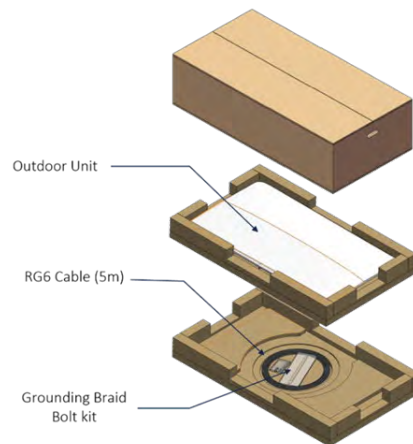
OW11Fx Outdoor Unit Package

1096 x 634 x 310 (W x D x H, mm)

Figure 6: Outdoor Unit Packaging

2.9.2 Indoor Unit

Description (CNX Box)	Qty	Specification
CNX-WIFI	1	
Ethernet cable (RJ45)	1	
PSU 250W AC PSA	1	
AC power (220V)	1	
AC power (110V)	1	
CNX Quick Install Guide (QIG)	1	

Table 2: CNX Packaging Details
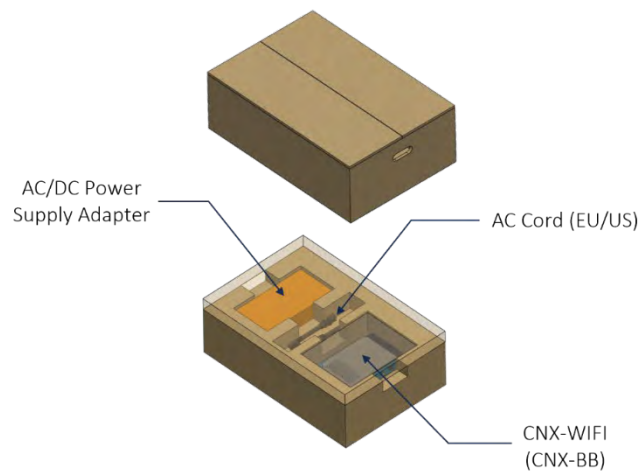
CNX Indoor Unit Package

569 x 429 x 310 (W x D x H, mm)

Figure 7: CNX Packaging

Chapter 3   Antenna (ODU) Installation

3.1   Installing a Land Fixed UT

3.1.1   Attaching Antenna to Adjustable Mount Adapter

The adjustable mount adapter is used in Land Fixed Deployments. It has a built-in leveling tool for easy adjustments. Once the appropriate mount is assembled, follow these instructions.

3.1.2   Assembly tools required

- M8 Allen wrench (not supplied)
- 12 mm wrench (not supplied)

1.   Place the adjustable mount adapter onto the pole.

Figure 8: Adjustable Mount Adapter on Pole

2.   Using a 12 mm wrench or socket wrench, tighten the three bolts on the adjustable mount adapter onto the pole.

Figure 9: Tighten Adjustable Mount Adapter to Pole

3. Check if the adjustable mount adapter is level by viewing the bubble level. If it is in the center, then it is level. You can proceed to step 7. If it is not, proceed to adjust the top in the next step.

Figure 10: Level Bubble

4. Loosen the bolts on the adjustable mount adapter

Figure 11: Loosen Bolts on Adjustable Mount Adapter

5. Rotate the adjustable mount adapter until it is parallel to the ground by using the built-in levelling tool. Verify that the bubble is aligned within the circle guide.

Figure 12: Using Leveling Tool

6. Once the adjustable mount adapter is level, tighten the bolts again to set it.

7. Lift the antenna out of the box. The holes marked below on the antenna will be used to attach the adjustable mount adapter.
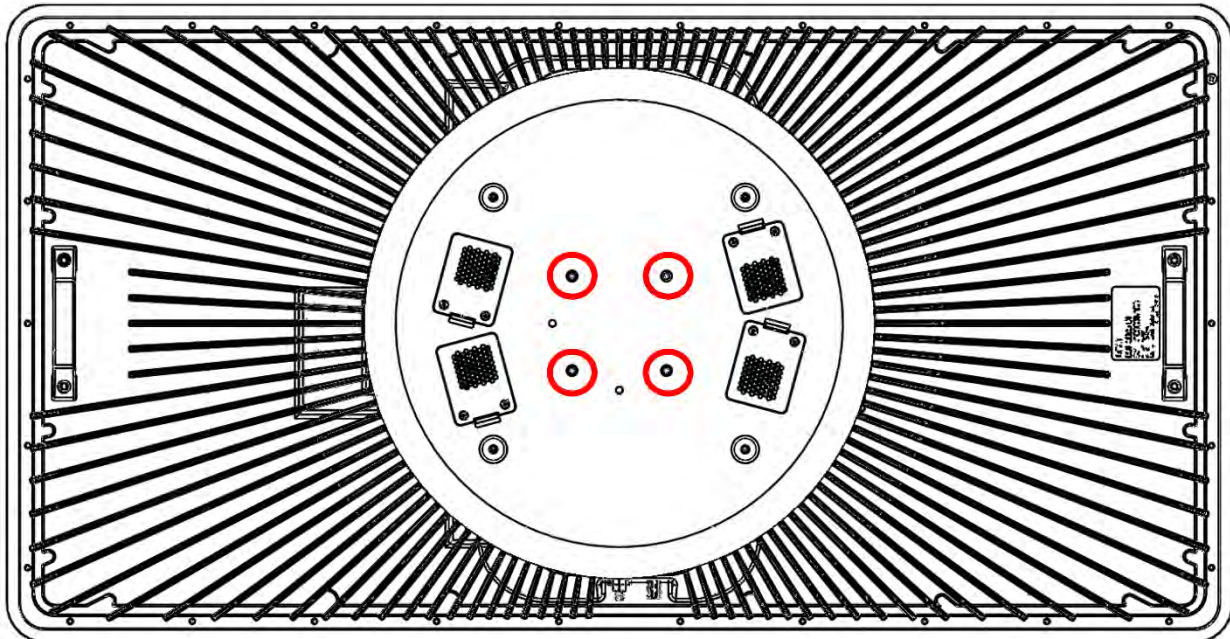
Figure 13: Attach Adjustable Mount Adapter

8. Move the antenna above the adjustable mount adapter and carefully lower down the antenna toward the adjustable mount adapter.
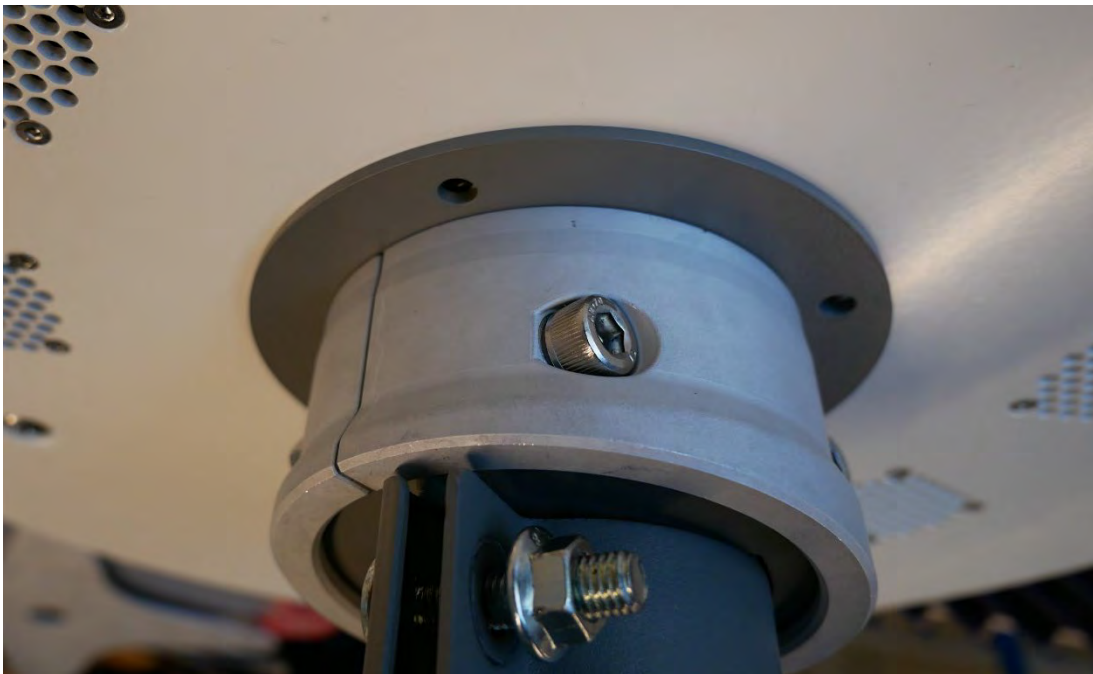
Figure 14: Antenna on Adjustable Mount Adapter

9. Align the holes on the antenna with the holes on the adjustable mount adapter. Insert the four screws with a Phillips head screwdriver.

Figure 15: Attach Antenna to Adjustable Mount Adapter

3.1.3 Cabling and Grounding the Antenna

A coaxial cable connects the antenna and the CNX. For Land Fixed applications, the antenna can be grounded to the base mount that you are using. Reference Supported Cable Lengths on page 77.

1. Connect the coaxial cable to the F-Connector on the antenna (a).
2. Connect the grounding strap to the antenna. Securely connect to the grounding system that complies with the safety standards in your country (b).
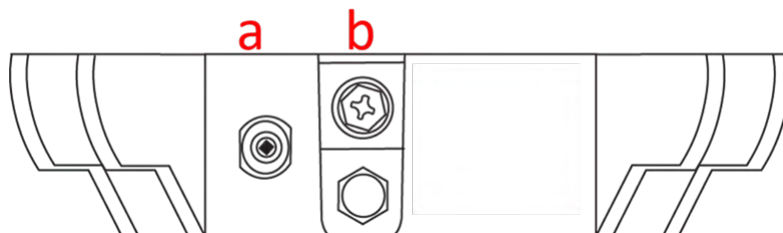
Figure 16: Cable and Ground Connectors

3.1.4 Grounding the antenna

Direct grounding for the antenna is very important for safety. Your antenna hardware must be protected from lightning strikes or static electricity by grounding. When establishing your grounding system, it must comply with the safety standards in your country.
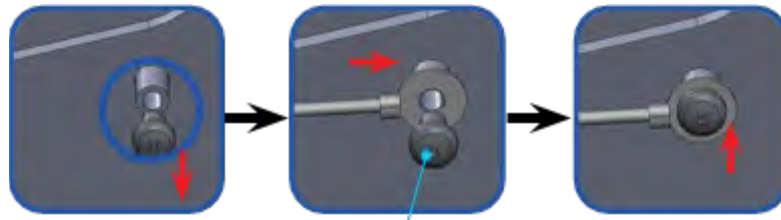
Figure 17: Grounding

Grounding Wire Specifications	
Material code (Intellian)	BL1035
Description	Flexible grounding braid
Wire gauge equivalent	4 (non-insulated)
Hole diameter	3/8"
Width	7/8"
Thickness	1/16"
Material	Tin-plated copper
Length	36"

Table 3 : Grounding Wire Specifications

3.2   Installing a Maritime UT

3.2.1   Antenna Mounting Requirements

You need to procure or fabricate a suitable pedestal mount or pole mount to support the Flat Panel Compact UT.

The mounting platform should be rigid and secured tightly to the structure of the vessel. Also, it should not be subjected to excessive vibration (ETS 300 019) 2–8 Hz frequency, 7.5 mm sine level; 8–500 Hz frequency, 2 G sine level) to ensure full antenna performance and prevention of potential mechanical damage.

Consider the following factors when selecting the mounting method:

- Confirm the physical size and weight of the antenna (see table below).

Size	Weight
96 cm. x 50 cm. x 12 cm.	19.3 kg.
(37.8 in. x 19.7 in. x 4.7 in.)	(42.5 lbs.)

- The chosen mounting method withstand wind loads and ensuring the safety of people and property.

⚠ WARNING

Do not place the antenna directly next to any radar systems. Precautions must be taken to ensure the placement of the Flat Panel User Terminal is at least 1m outside the radar and at an angle of -10 to 10° from the radar pointing direction. Failure to follow these guidelines may cause damage to the User Terminal.

3.2.2   Antenna Mounting Hole Pattern

⚠ WARNING

Use the supplied mounting template when drilling mounting holes on the mast. The hole placement for the antenna must match the mounting hole pattern on the template. When reusing an existing mast, make sure the location of the holes on the mast correspond to the hole locations and sizes printed on the mounting template.

3.2.3   Attaching Antenna to Maritime Mount Adapter

Intellian supports three approaches to mounting the outdoor unit in the maritime environment.

3.2.3.1   *Intellian Maritime Adjustable Mount Adapter Kit*

The Maritime mount adapter kits consist of a maritime mount adapter plate (OW-6019) and required hardware.
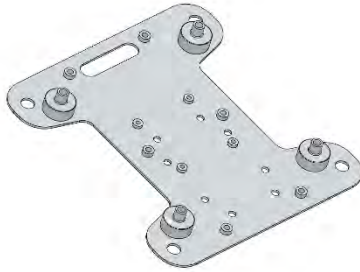
Figure 18: Mount Adapter Plate

Description	Qty
Maritime Mount Adapter (OW-6019)	1
Hex Nut M12	4
Hex-S Bolt M8x30	4
Hex Bolt M12x30	4
Hex bolt M6 12	4
Spring Washer M12	4
Flat Washer M12	4
Spring Washer M8	4
Flat Washer M8	4
Hex-S Bolt 5/16-18	8

Attaching to a Pole Mount
   1. With the antenna upside down, take out the screws shown in Figure 25.
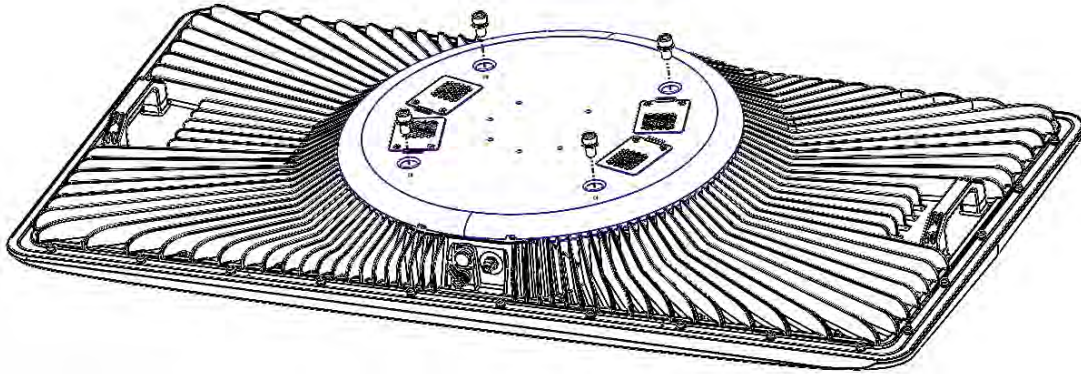
Figure 19: Mount Points

   2. Place the Adjustable Mount Adapter onto the pole and level the mount. Reference Attaching Antenna to Adjustable Mount Adapter on page 16 for detailed information.

   3. Secure the maritime mount adapter plate at the 200 mm mount points on the base of the adjustable mount adapter using the M6 x 12 mm hardware provide with adjustable mount adapter.
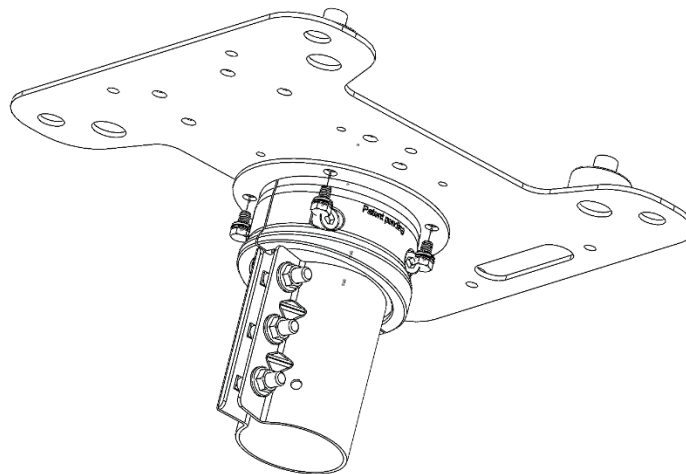
Figure 20: Attach Adjustable Mount Adapter to Maritime
Mount Adapter Plate

4. Place the antenna onto the Maritime Mount Adapter Plate making sure the pegs fit into the holes and do not cover the fans.
5. Attach the antenna to the mount with the four M8 x 1.25 x 35 mm socket hex bolts with a split lock washer and a flat washer.
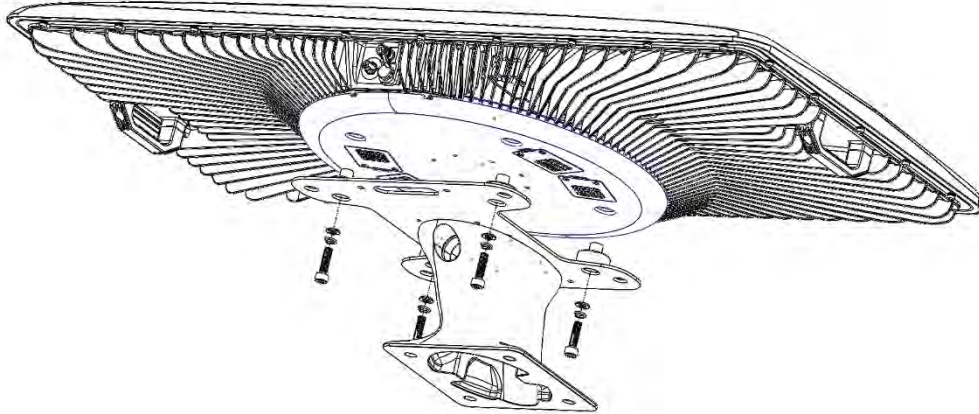
Figure 21: Attach Antenna to Mount

- When installing the mount adapter plate to the base of the antenna, ensure the fans are not obstructed.
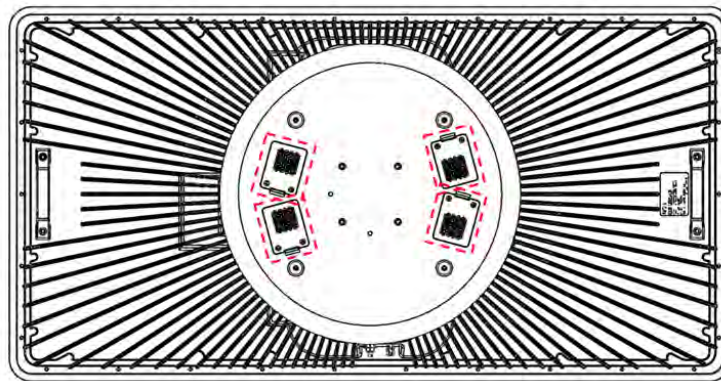
Figure 22: Antenna Fans

1. With the antenna upside down, take out the screws shown in Figure 26.
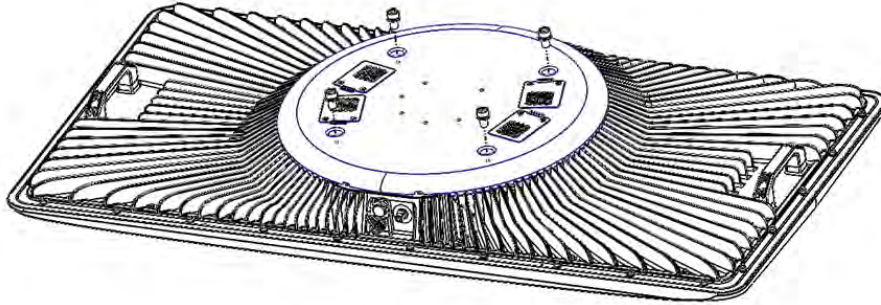
Figure 23: Mount Points

2. Place the Maritime Mount Adapter Plate onto pedestal ensuring all holes are aligned with the base mount hole pattern using the recommended hardware from manufacturer guide of selected mount. For the mount type seen below, use eight 5/16 x 18 hex socket bolts.
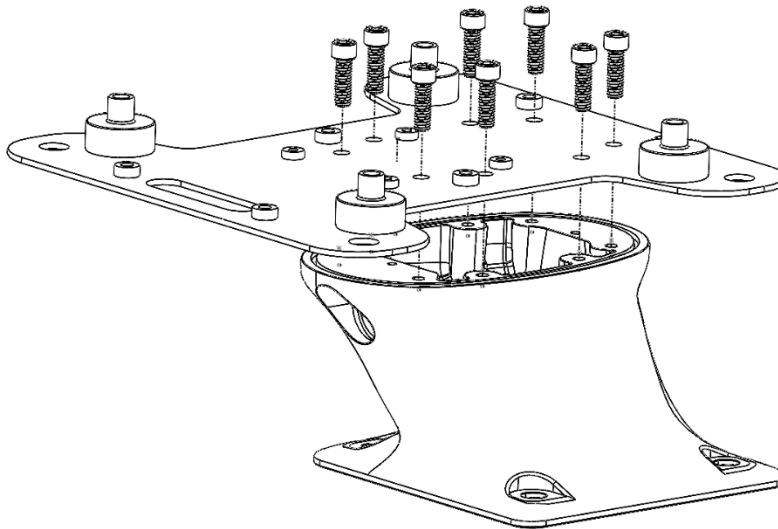
Figure 24: Place Plate onto Pedestal

3. Using the 200 mm hole pattern, install all four M8 x 1.25 x 35 mm hex socket bolts up through the base of the Maritime Mount Adapter Plate into the antenna ensuring they are tightened making sure the pegs fit into the holes and not covering the fans.
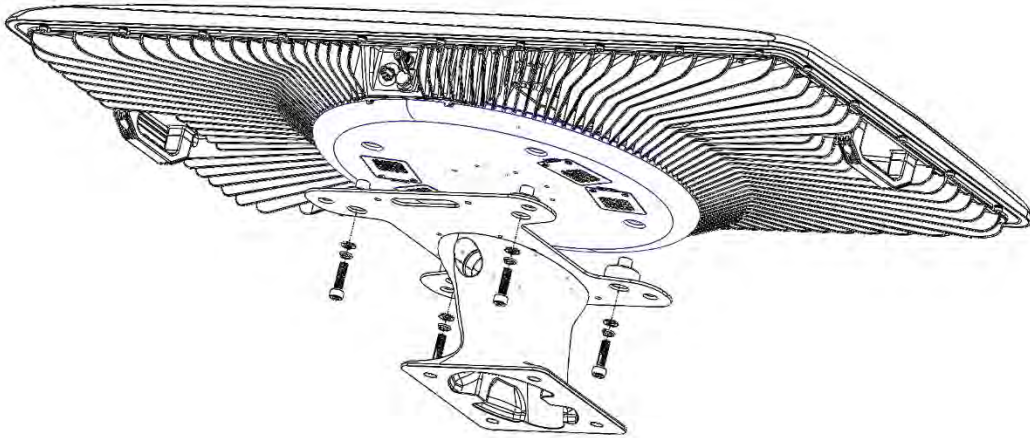
Figure 25: Attach Antenna to Plate

3.2.3.4   Attaching to a Mast
1. With the antenna upside down, take out the screws shown in Figure 29.
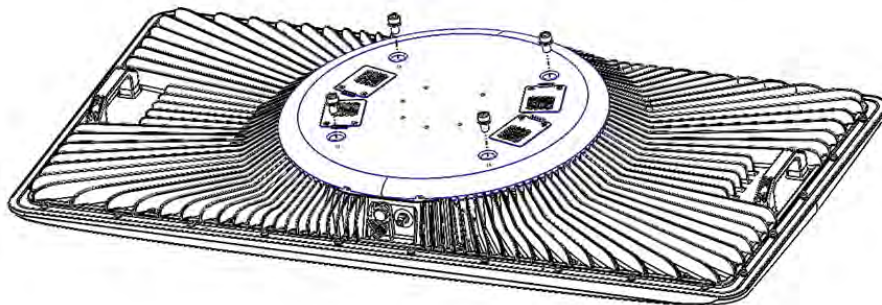
Figure 26: Mount Points

2. Take the four hex bolts M12 x 1.25 x 40 mm and place them in the large holes in the corner of the Maritime Mount Adapter Plate. It is recommended that you place tape over the bolts temporarily because you will need to turn it over for the next step.
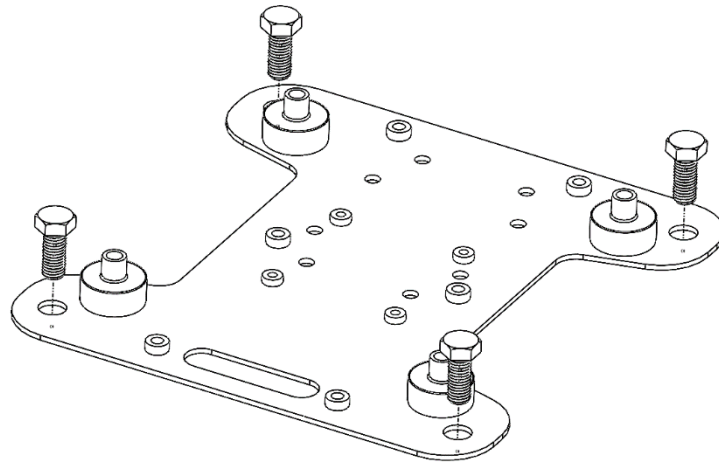
Figure 27: Place Bolts in Adapter

3. Attach the Maritime Adapter Plate to the antenna using the four M8 x 1.25 x 35 mm hex socket bolts.
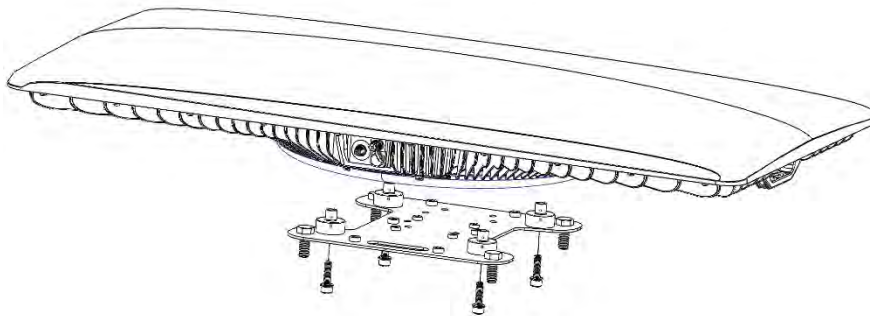
Figure 28: Attach Plate to Antenna

4. Place the antenna and plate onto the mast. The M12 bolts need to be secured to the mast with the M12 flat washer, lock washer, and nut, using a 19 mm wrench and socket.
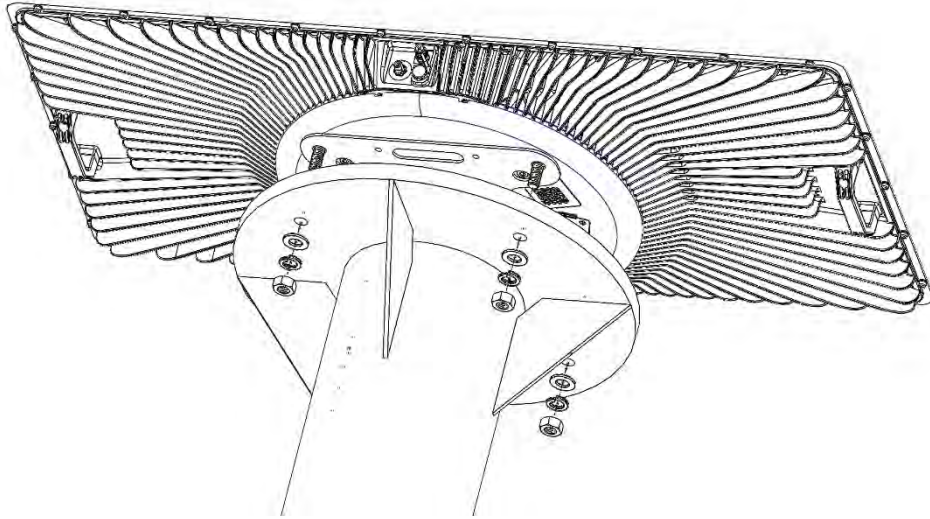
Figure 29: Attach Antenna to Mast

3.2.3.5   Routing RF Cable on Mast (Example Only)

The cable must be routed from the antenna and through the ship to end up at the CNX. When pulling the cable in place, avoid sharp bends, kinking, and excessive force. After placement, seal the deck penetration gland and tie the cable securely in place. Cable brackets must be installed on the mast to secure the cable.

⚠ WARNING	The gooseneck must be installed on the side of the mast to protect the cable from water.

NOTE	Ensure that cable has been run through watertight fittings to prevent water entry into the vessel when installation is completed.
	This is a general example of routing cables on the mast. The routing method may differ depending on the ship's environment.

3.2.3.5.1 Option 1. Routing Cable Through Inside Mast

1. Before placing the radome on the mast, route the cable through the gooseneck on the deck and the built-in gooseneck on the mast for easier placing of the RF cable through the inside of the mast as shown in the picture.
2. Maintain a sufficient cable length (at least 2 m.) when routing the cable on the surface and inside of the mast. After connecting the cable to the connector on the radome, adjust the length and fix the cable on the cable brackets using cable ties.
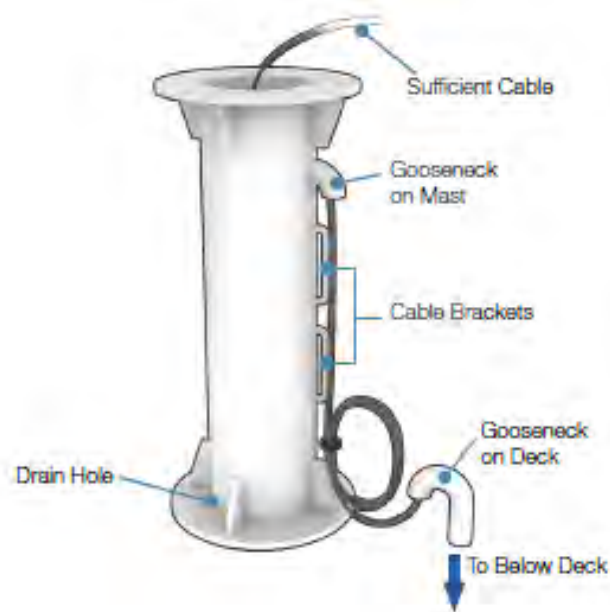
Figure 30: Routing Cable Through Inside of Mast

3.2.3.5.2 Option 2. Routing Cable on Outside of Mast

This method is generally recommended.

1. Route the cable from the gooseneck on the deck to the antenna as shown in the picture.
2. Maintain a sufficient cable length (at least 2 m.) when routing the cable on the surface of the mast. After connecting the cable to the connector on the radome, adjust the length and fix the cable on the cable brackets using cable ties.
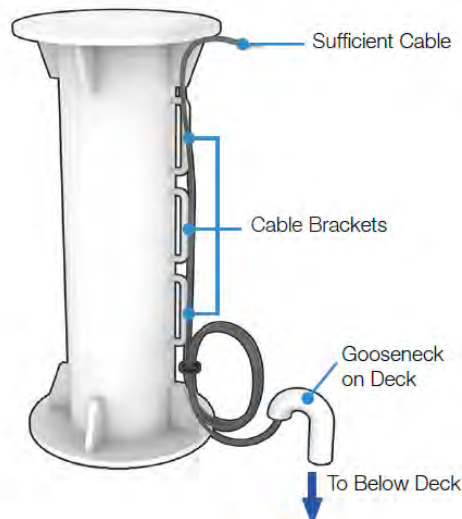
Figure 31: Routing Cable Through Outside of Mast

⚠ CAUTION	Do not leave the cables on the top surface of the mast. When putting down the antenna on the mast, there is a risk of damage to the cable connector if the cable is located on the top surface of the mast.

3.2.3.6   Custom Mount Adapter

Please use the hole pattern provided in the package for determining mounting points on the custom mount adapter. Ensure the use of standoffs provided in package for adequate clearance for air flow.

Intellian

Antenna Mounting Hole Template

200 mm. (7.9 in.)

Drill Hole
7 mm. (0.28 in.)
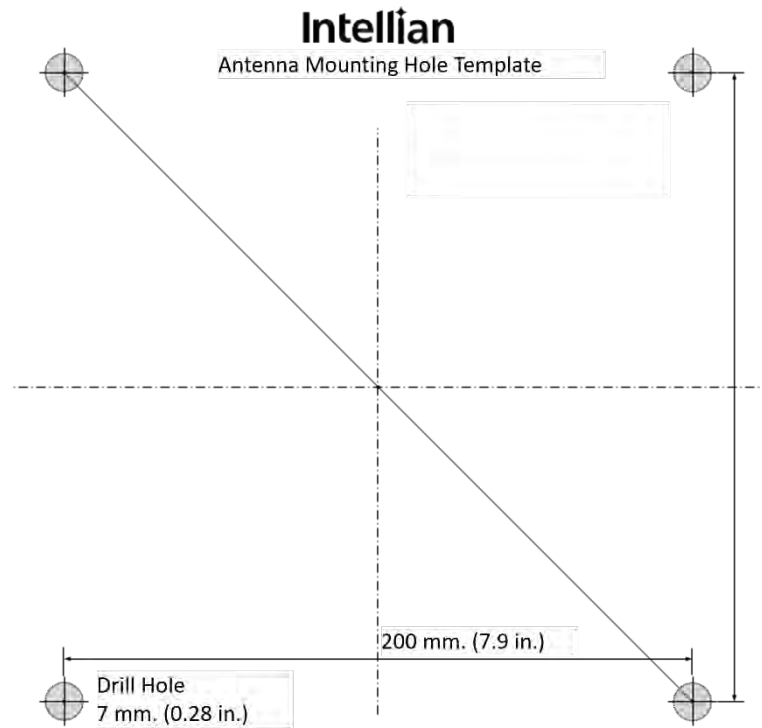
Figure 32: Hole Pattern

3.3 Installing a Land Mobile UT

The Land Mobile mount adapter kit [Part number] consist of two mount adapter rails and all associated hardware. This mount adapter kit can be used in conjunction with vehicle roof crossbars.
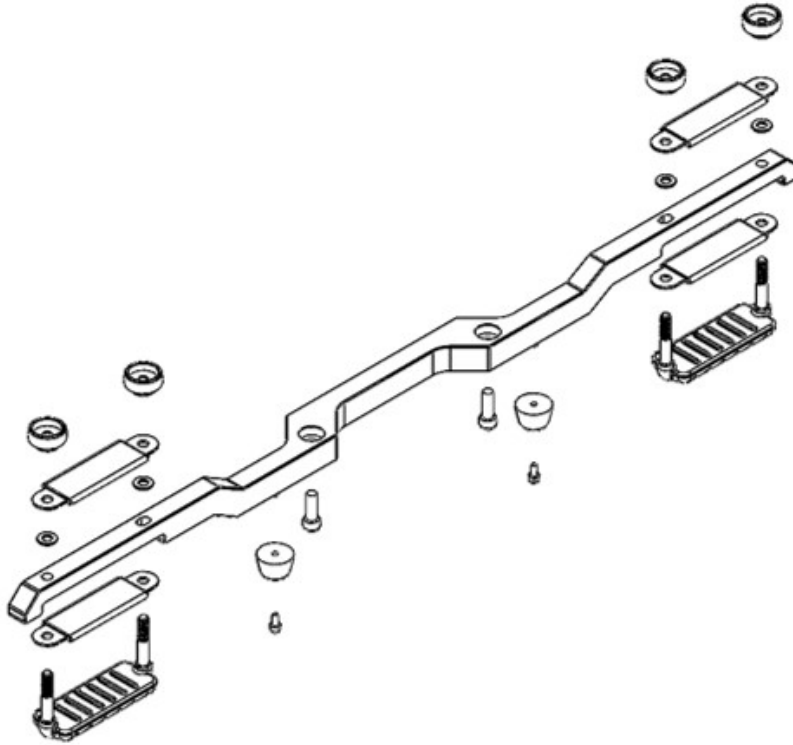
Figure 33: Land Mobility Parts
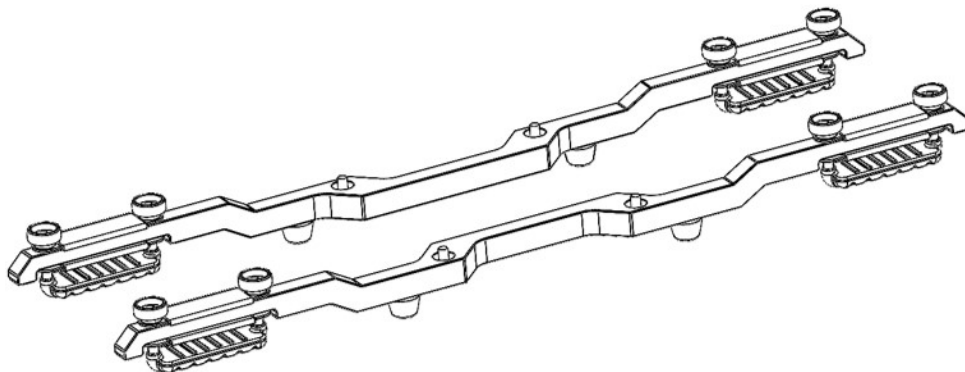
Figure 34: Land Mobility Mount Adapter

3.3.1 Attaching the Antenna to the Mount Adapter

Attach the mount adapter to the base on the antenna using the provided hardware.

3.3.2 Attaching to Vehicle Crossbars

Ensure your vehicle has a crossbar system installed on the car.
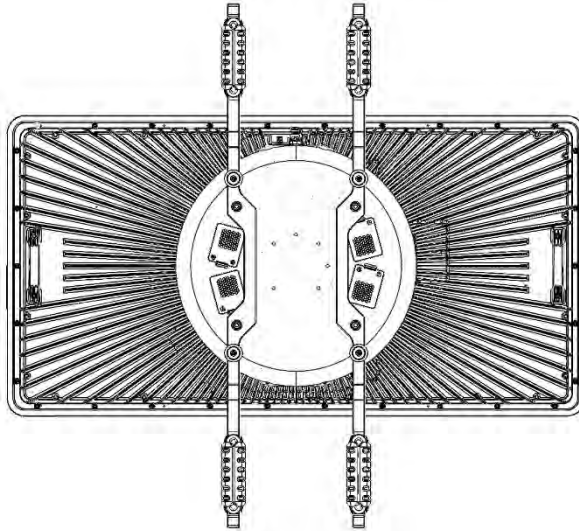
Figure 35: Attach Antenna to Mount Adapter

1. Position the cross bars so that the space between them is 25" (635 mm). The land mobile mount adapter pieces will run in line with the vehicle. Ensure there will be no interference from other items such as vehicle radio antennas or sunroofs. Look to your owner's manual for further details and instructions on this process.
2. Place the antenna and mount adapter on the crossbars ensuring the cross bars are centered between the mounting holes and the antenna is centered on the vehicle. Level the antenna as much as possible.
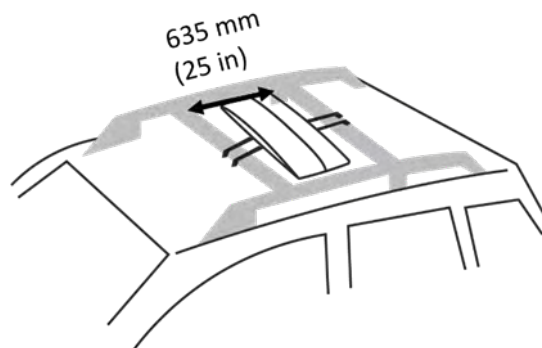
Figure 36: Antenna on Crossbars

3. Install the U bolts from underneath around each cross bar, and then secure it with the nut on each side. Repeat for all 4 sides.
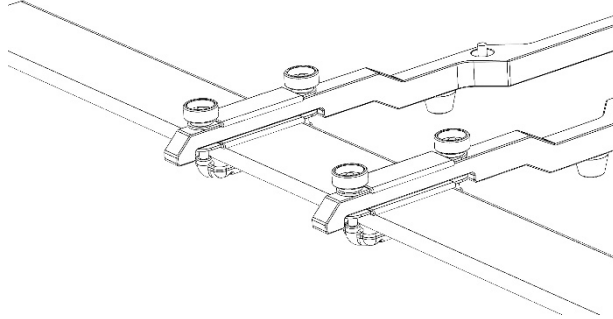
Figure 37: Install U Bolts

4. Tighten each nut on the U bolts to ensure the mount is secured.
5. Connect the coax cable to the antenna and route back into the car.

Chapter 4   CNX (IDU) Installation

4.1   CNX-WIFI

4.1.1   Connecting the CNX-WIFI

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

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

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

4.1.1.3   Connect power cable
- When utilizing AC power, plug the appropriate power cable (AC power cord (NEMA 5-15P) or AC power cord (CEEE7/7)) into the power adapter.

250W Power Adapter-Enterprise

NA Power Cable
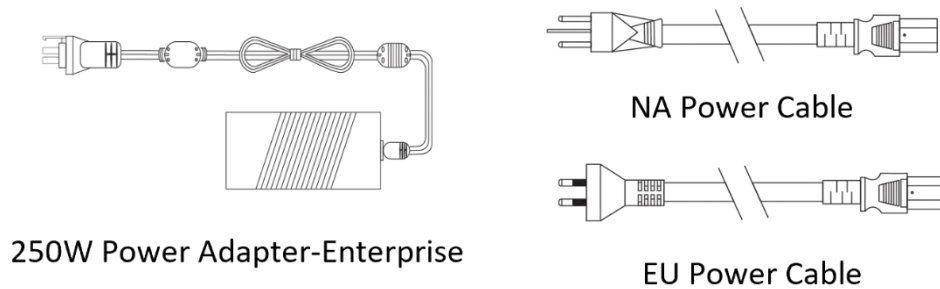
EU Power Cable

Figure 38: AC Power Cable

4.1.1.4   Connect coax cable to the coax port on the CNX-WIFI
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.
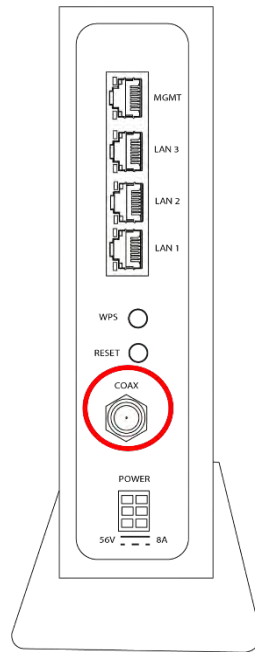
Figure 39: Connect Coax Cable

4.1.1.5   Connect power
- Connect one end of the power supply unit to the electrical outlet and the other end to the CNX-WIFI.
- It is recommended that the power adapter is plugged into the outlet before plugging the power cable into the CNX-WIFI.

- The power connector can only be plugged into the CNX-WIFI 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.
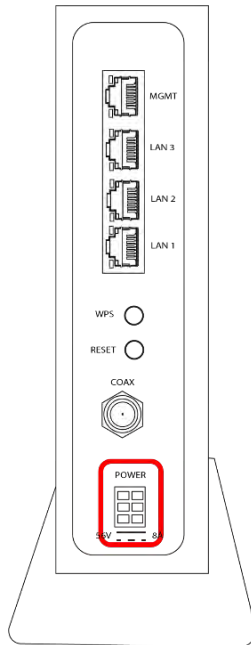
Figure 40: Connect Power

4.1.1.6   LED Light Indicators

- Check if the blue power LED on the top is working correctly as described Table 4: CNX-WIFI LED on page 40.
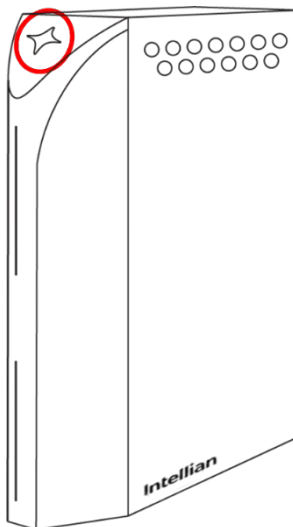
Figure 41: CNX-WIFI Power LED

4.1.1.7   CNX-WIFI LUI

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

4.1.2 CNX-WIFI Front and Back Panels

During the installation process and use, it is important to know the parts of the CNX-WIFI. 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-WIFI.
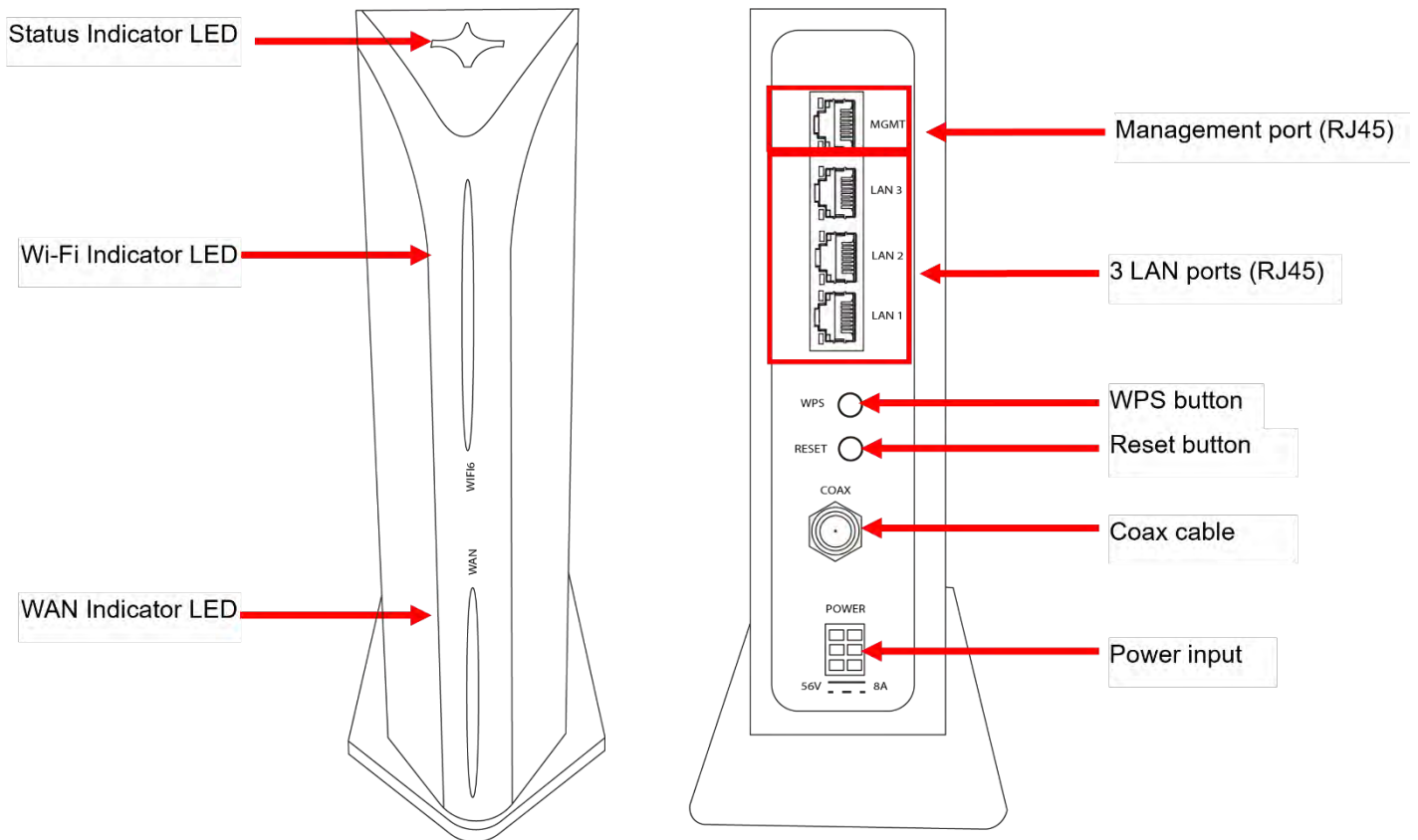
Figure 42: Front and Back Panels of CNX-WIFI

4.1.3 CNX-WIFI LED TABLE

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

Label	Light Output	Description of status/function
Front Panel		
Status LED	Off	No Power
	Solid Blue	Connected to power supply
	Solid Red	Fault Condition
Wi-Fi 6 LED	Off	5G and 2.4G Disabled
	Blinking Blue	Data Activity
	Solid Blue	5G or 2.4G Enabled
WAN LED	Off	Coaxial Port Disconnected
	Blinking Blue	Data Activity
	Solid Blue	Coaxial 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-WIFI power and data connection
Power Input	Port	To convert AC 100-240V power to DC +56V power for CNX-WIFI (250W)

Table 4: CNX-WIFI LED

4.1.4 Managing the Networks (SSID)

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

There are two work modes. The CNX-WIFI 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-WIFI 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.
- Type in the password "admin" and select **Login**.
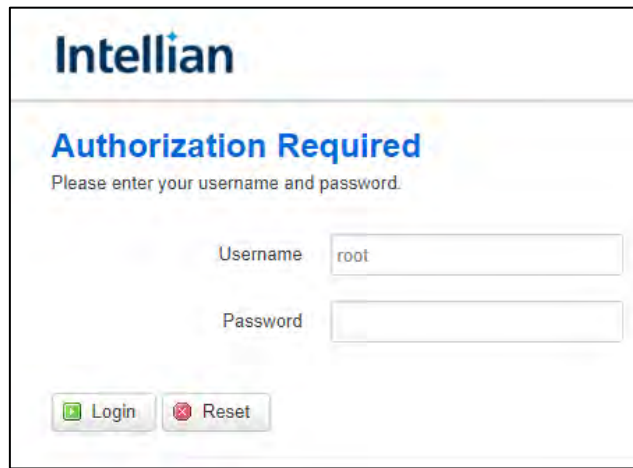
Figure 43: Login

41

- The main page will display.
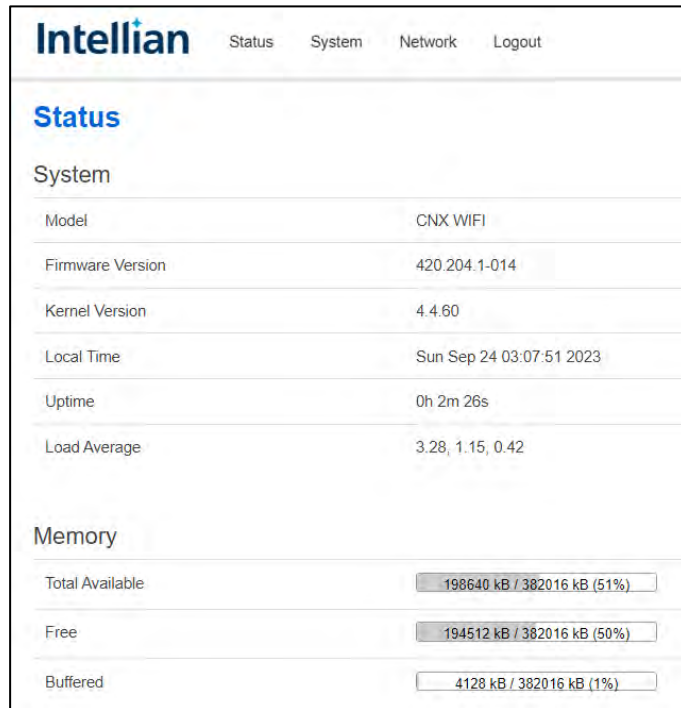
Figure 44: Main Page

- Go to **Network > Work Mode** to select the appropriate mode.
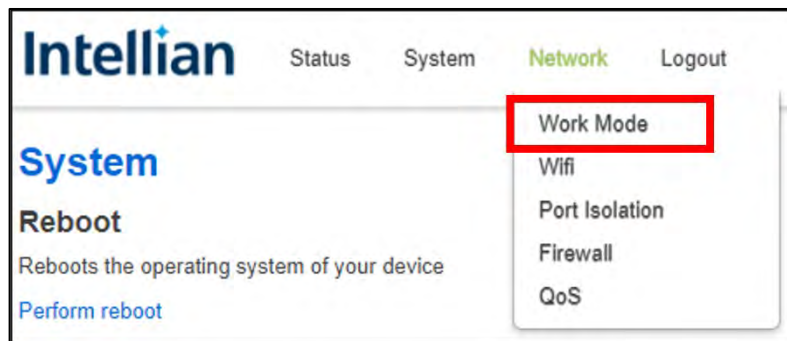
Figure 45: Work Mode Menu Option

- 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.
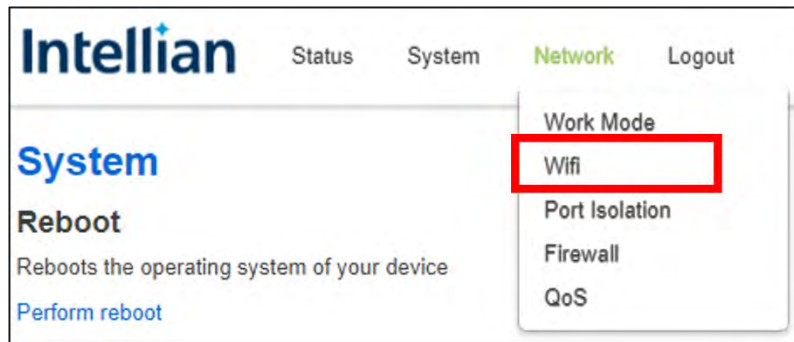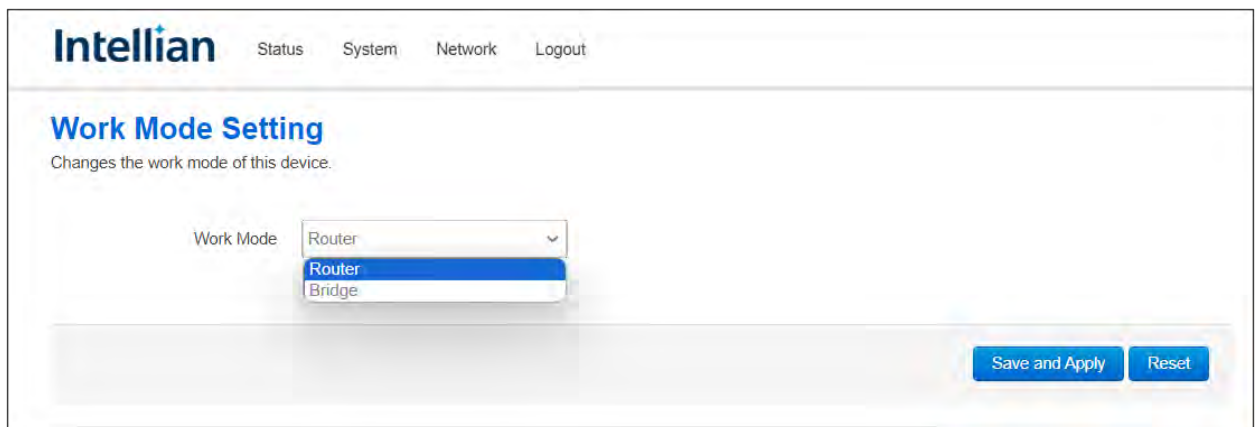

Figure 46: Wi-Fi Menu Option

Figure 47: 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.
  - o The broadcast networks (APN1 and APN2) are highlighted.
  - o The variables that should be changed for the broadcast networks are **name** and **password**.
  - o Whatever changes made to the 2.4 GHz frequency must be made to the 5 GHz networks.
  - o When any changes are made, the networks will be unavailable up to 4 minutes during the update.

Figure 48: Broadcast Network Options

- Select the Edit button to make changes.

Figure 49: 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 50: 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-WIFI.
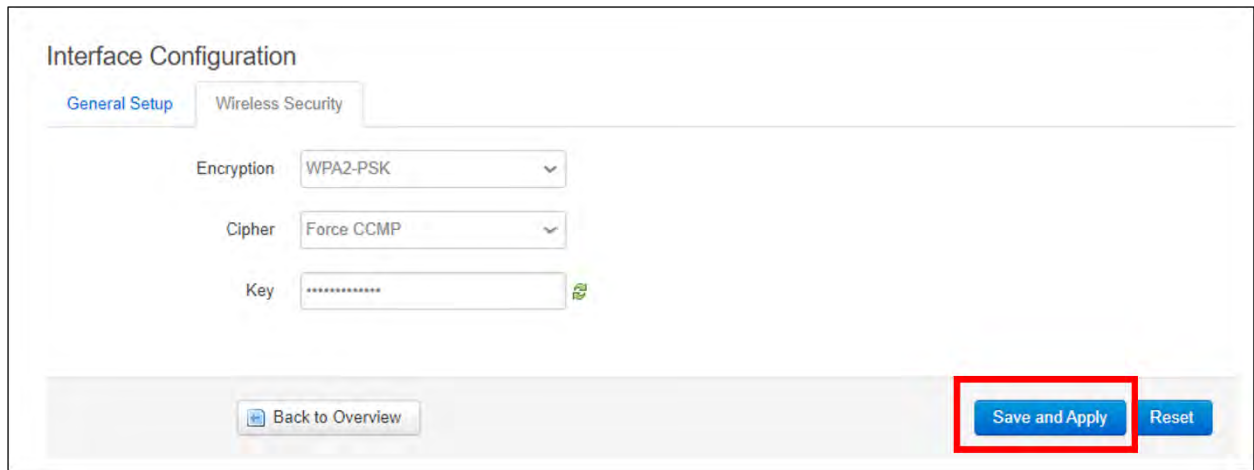
Figure 51: Password Change

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

Figure 52: 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-WIFI.
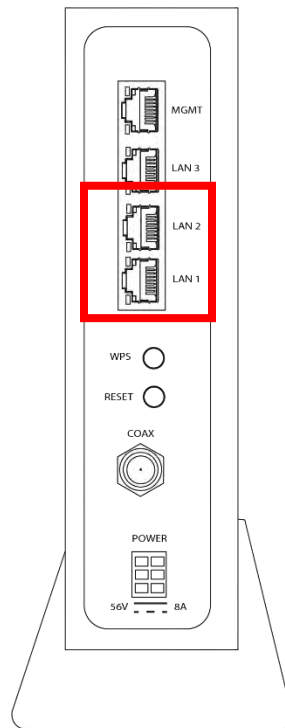

Figure 53: LAN1 and LAN2 ports

4.2 DC Power Option

4.2.1 Preparing Battery

1. Disconnect the negative terminal from the battery.

Figure 54: Negative Terminal

2. Connect the ring terminal to the negative lead and place it to the side where it will not come into contact with the battery lead.

Figure 55: Connect Ring Terminal

3. Unscrew the positive lead and connect the ring terminal ensuring it is secured in place. Replace positive lead cover as necessary.
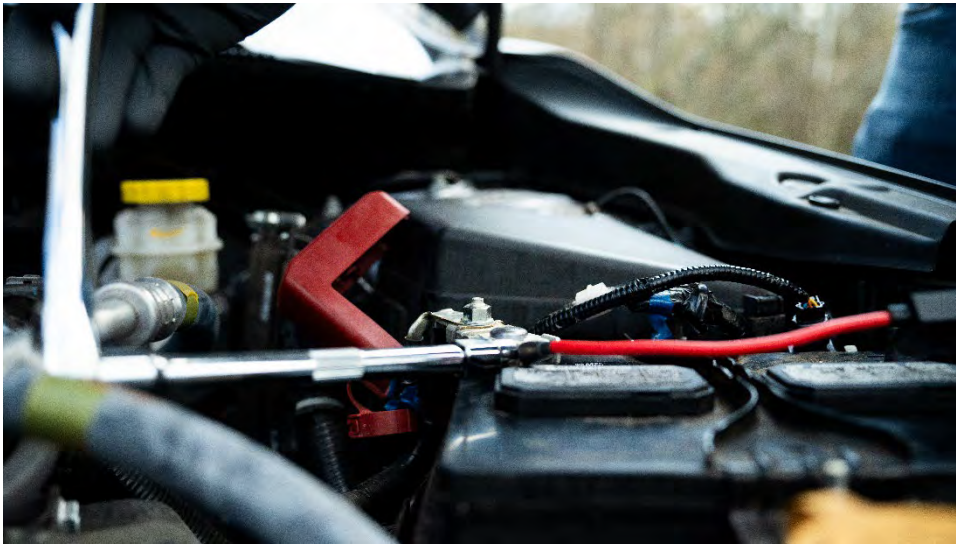

Figure 56: Unscrew Positive Lead

Note: Do not reconnect the negative lead yet as it needs to be an open circuit for safety.

4.2.2 Wire Run

4. Route and support the wires in the engine bay from the battery and through the firewall to the vehicle's interior.
5. Run the wires to the PSA or inverters end location ensuring there's sufficient slack.

4.2.3 Install the DC-DC PSA

6. Place the PSA/Inverter in the passenger footwell or other desired location.
7. Secure it in place.
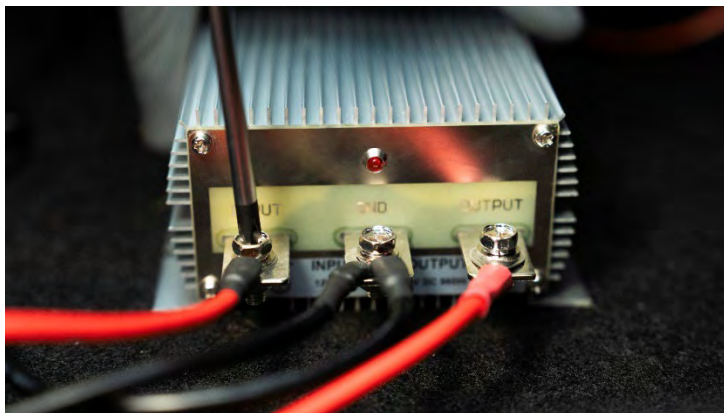8. Connect the leads from the battery to the input of the device.

Figure 57: DC-DC PSA

9. For the PSA, connect the output leads, that have the CNX connector on the other end, to the CNX power input. For the inverter, plug in the provided AC-DC PSA into the unit's outlet, and then to the CNX.
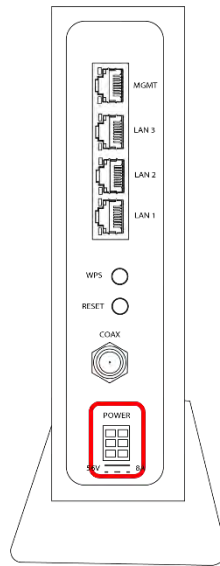

Figure 58: CNX Power Connection

4.2.4 Battery

10. Connect the negative lead to the battery terminal to complete the circuit.

4.2.5 Switch Power On

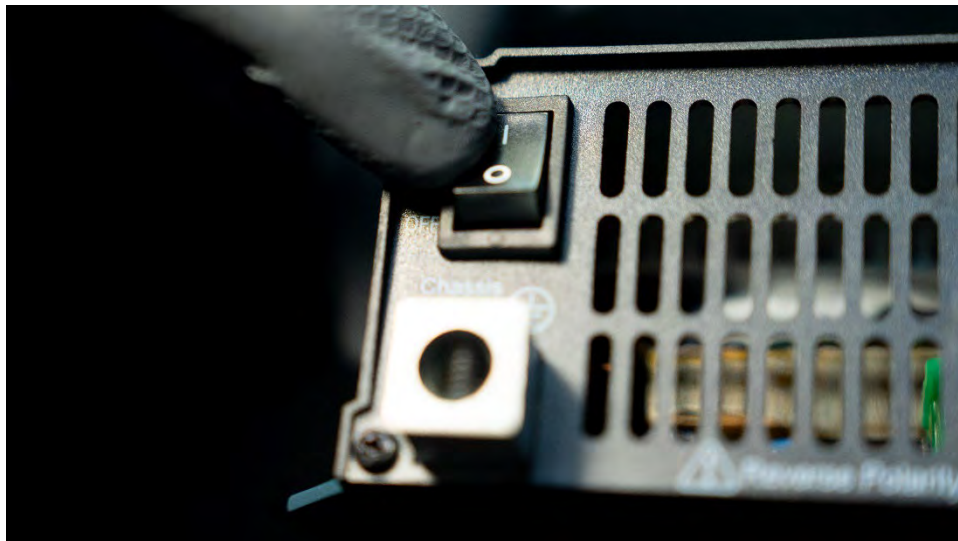11. Ensure all switches on the PSA or inverter are now turned on.

Figure 59: Switch Power On

Chapter 5   Intellian Mobile App and LUI Overview

5.1   Loading the Ephemeris File

The following steps will complete the commissioning process and allow the User Terminal to connect to the OneWeb network. The CNX WIFI users can use the Intellian Mobile App to complete all the steps described.

NOTE

What is Ephemeris Data?

Ephemeris Data contains current information about the orbits of the satellites in the OneWeb constellation. The User Terminal uses ephemeris data to determine the positions of the satellites in the sky at any given time.

Every 30 days, this data file is updated. Once User Terminal is commissioned this will be updated automatically.

- Load Ephemeris
  file by utilizing the Local User Interface (LUI).
  1. From a web browser, navigate to https://ephemeris.oneweb.net/.
  2. Select the **ltef/** directory.

Figure 60: ltef/ Directory

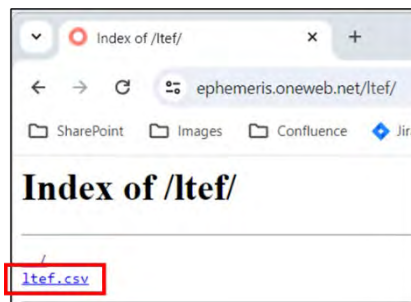 3. Select the **ltef.csv** file to download.

Figure 61: ltef.csv File

4. Go to the LUI main page at **192.168.100.1** and select **Install** from the menu.

Figure 62: LUI Main Page

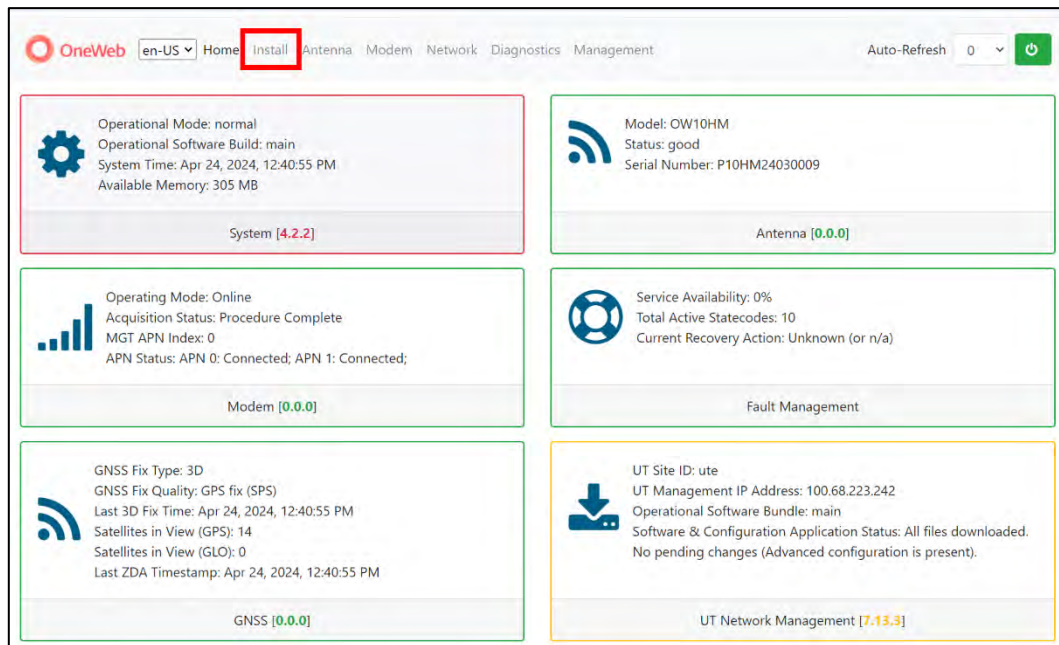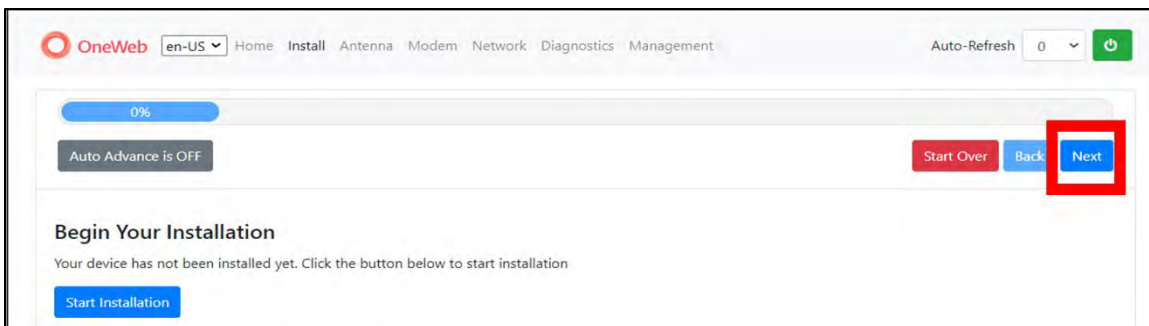5. Select the **Next** button on the Begin Your Installation page.

Figure 63: Begin Your Installation Page

6. Select the **Next** button on the Upload Software Bundle page.
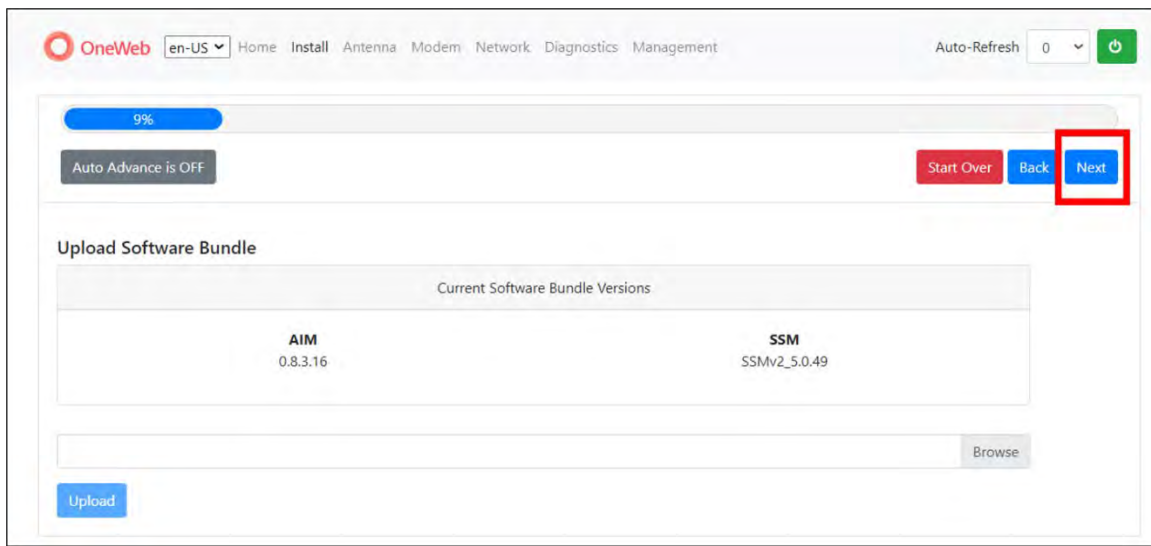
Figure 64: Update Software Bundle Page

7. Select the **Browse** button on the Upload Ephemeris page.
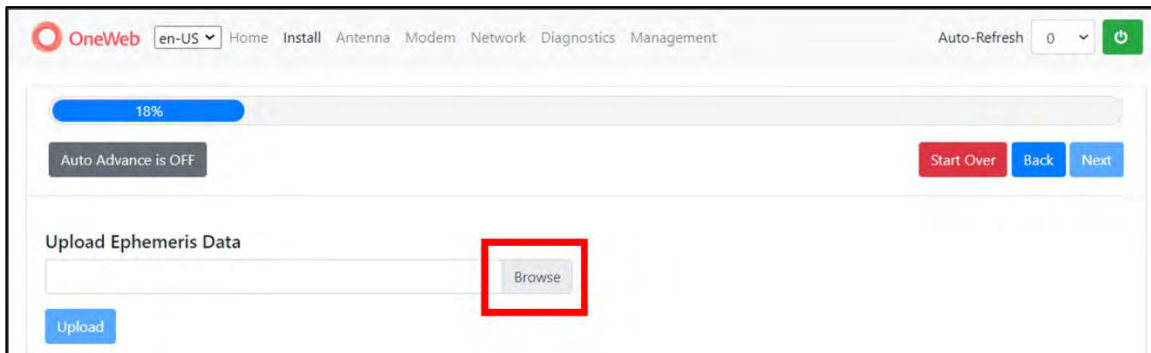
Figure 65: Select Browse

8. Select the **Itef.csv** file and click **Open**.
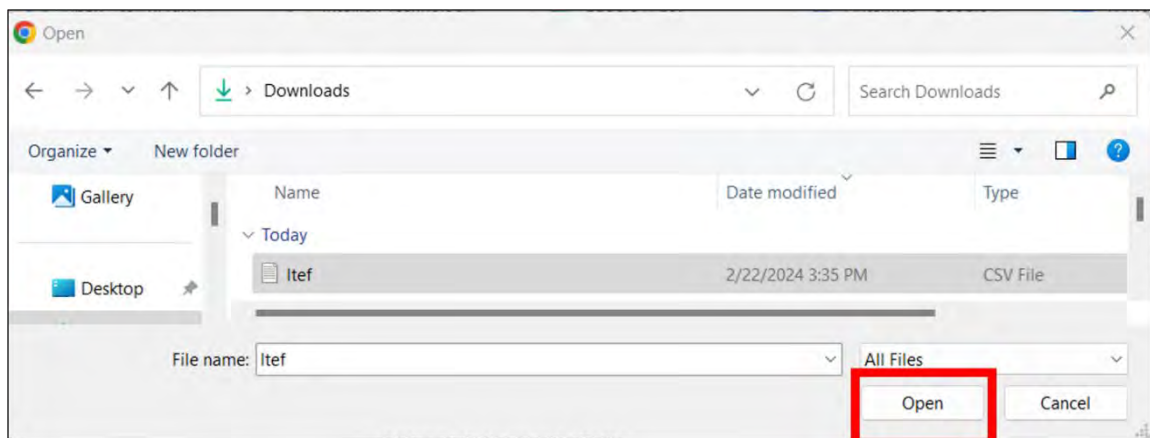
Figure 66: Open Itef.csv File

9. Select the **Upload** button.
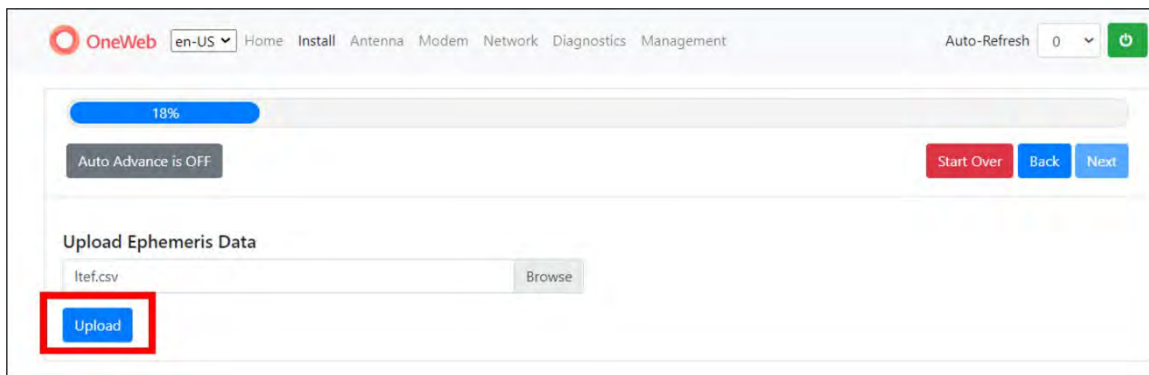
Figure 67: Upload Ephemeris File

10. When the upload has completed, a message will display that it has been reset.
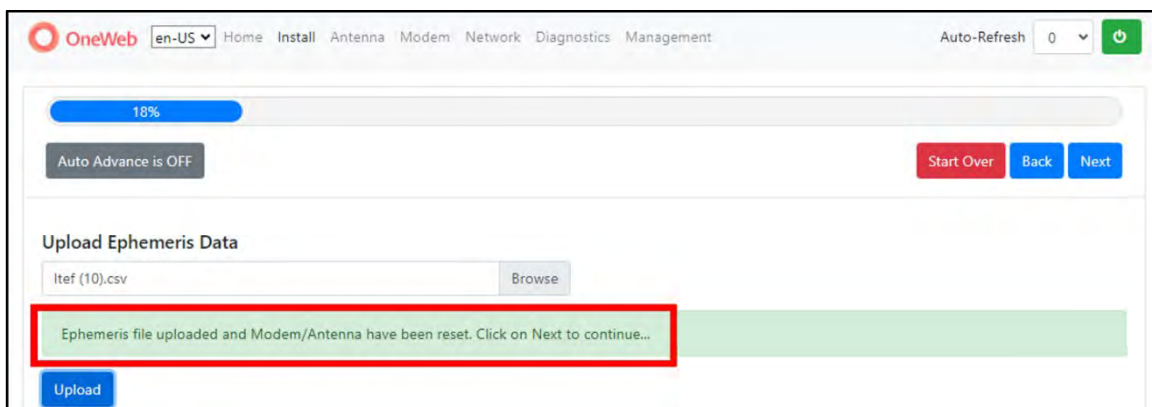
Figure 68: Upload Success

11. The UT will need to be rebooted for the new ephemeris file to take effect. Click the **Reboot** button.
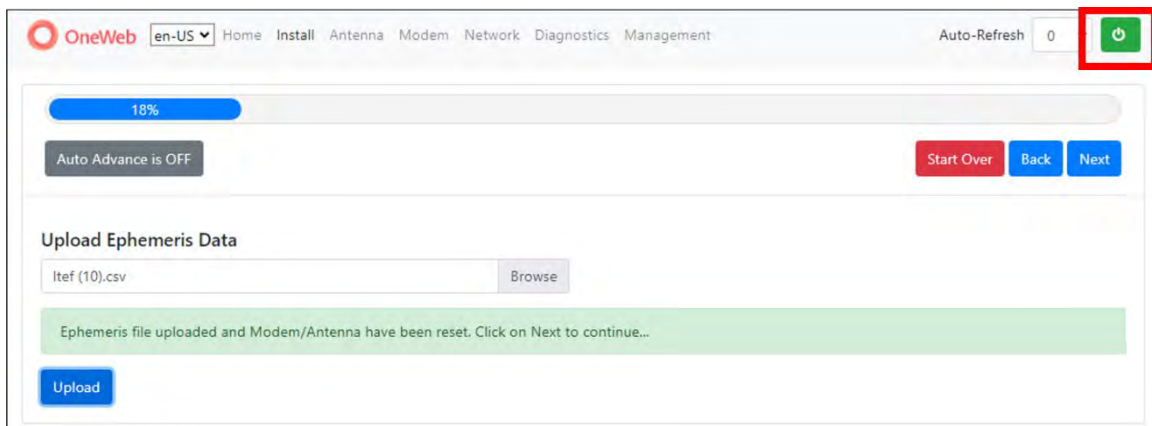
Figure 69: Reboot

12. On power up, return to the LUI Install menu and complete the remaining installation steps by selecting the Next button when prompted.

5.2 Updating Software Bundles

To update a software bundle, follow these steps.

1. Go to the User Terminal LUI main page at **192.168.100.1** and select **Diagnostics** from the menu.
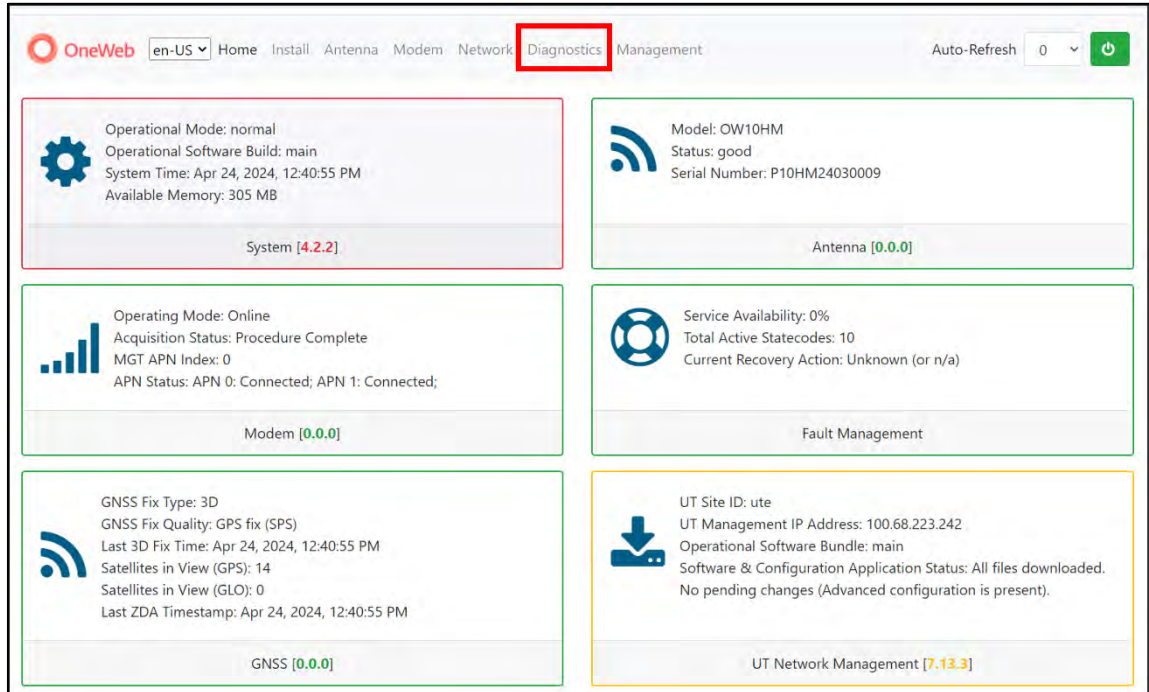
Figure 70: Diagnostics Page

2. On the **Diagnostics** page, select **Configuration** from the menu on the left.
3. Type in "manage" in the filter field to display the desired groups.
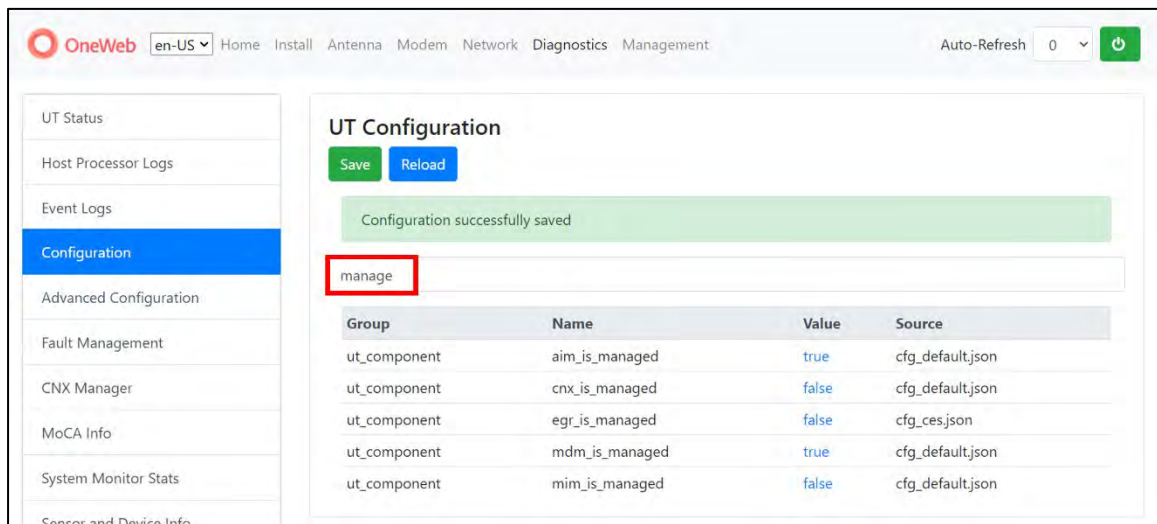
Figure 71: Configuration

4. Check the value of "aim_is_managed" group. If the value is true, continue to step 11.
5. If it is false, it will need to be reloaded. Click on the **false** link for "aim_is_managed".
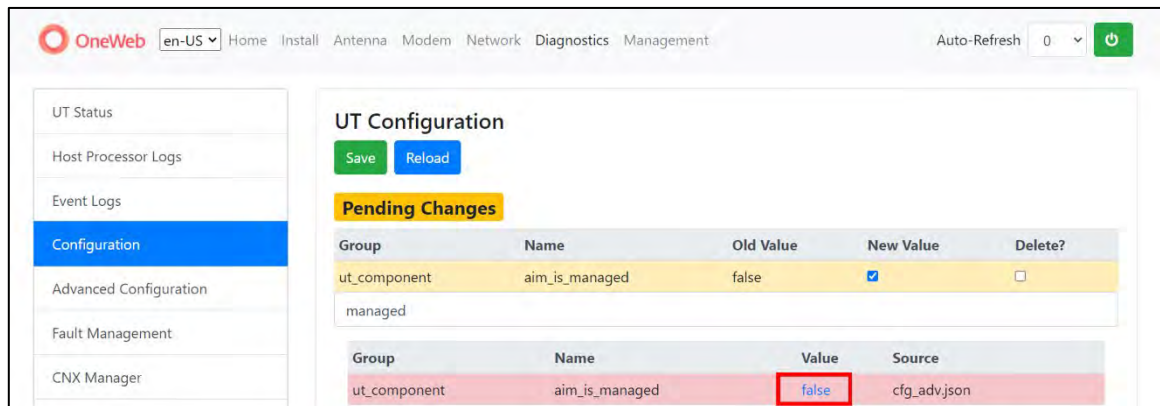
Figure 72: Updating AIM Value

6. The **Pending Changes** section will display above the group list. Select the checkbox for **New Value**.
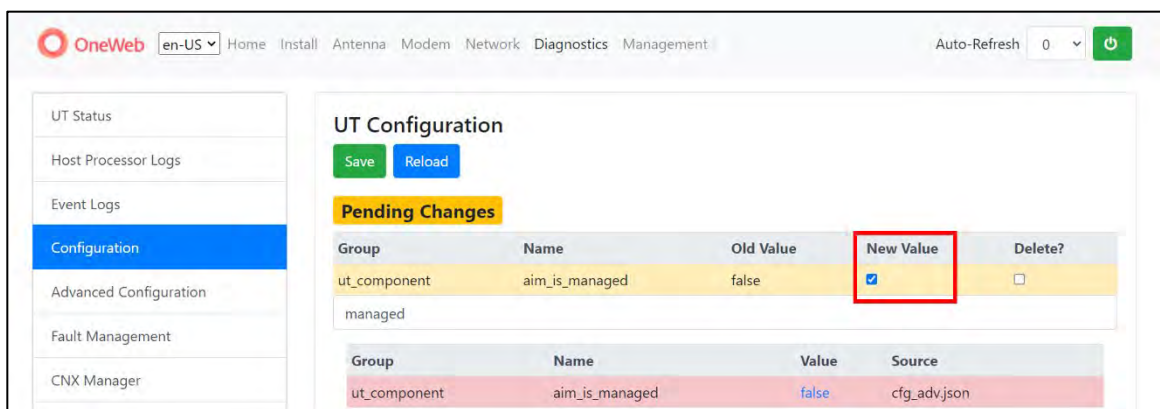
Figure 73: Pending Changes Updates

7. Select **Save** and then **Reload** to apply changes.
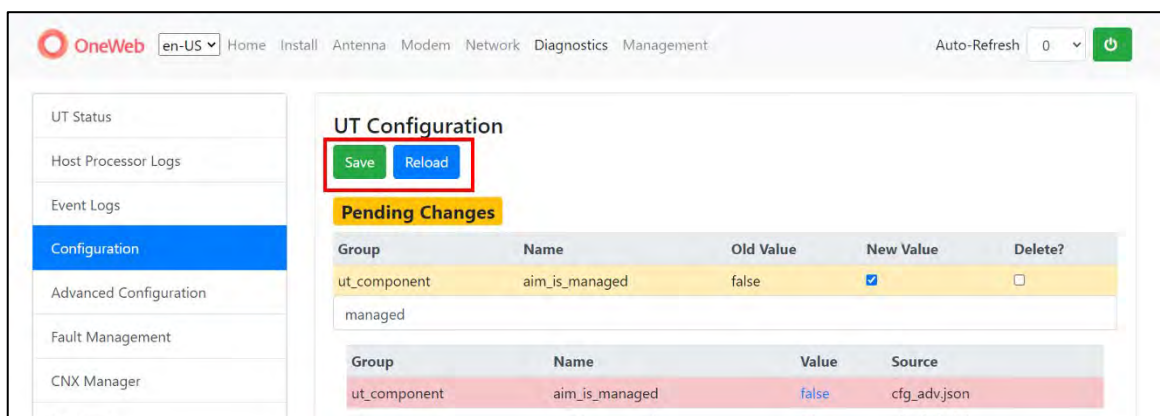
Figure 74: Save and Reload

8. In order to apply the changes, the system must be rebooted. Click on the green **Reboot** button.
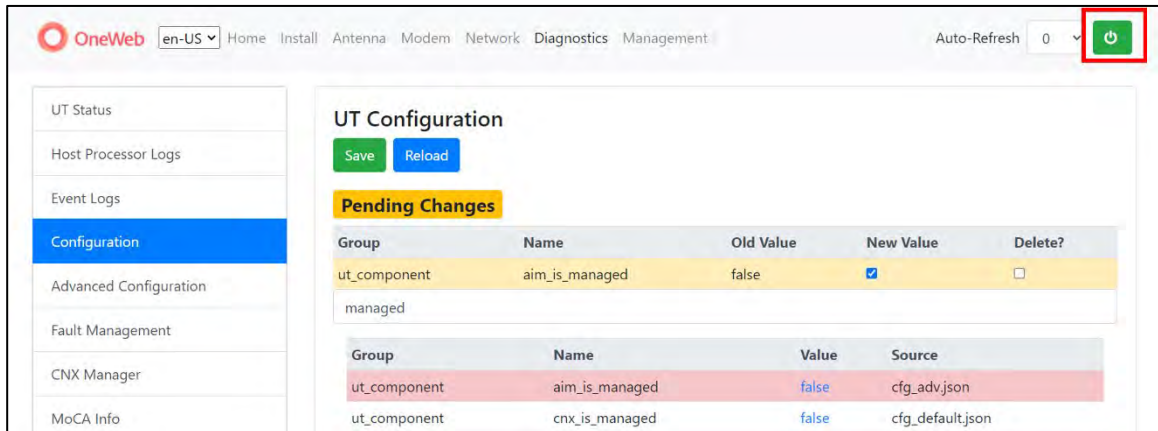
Figure 75: Reboot

9. Once the system has rebooted, go back to the configuration page to verify that the "aim_is_managed" group has a value of **true**.
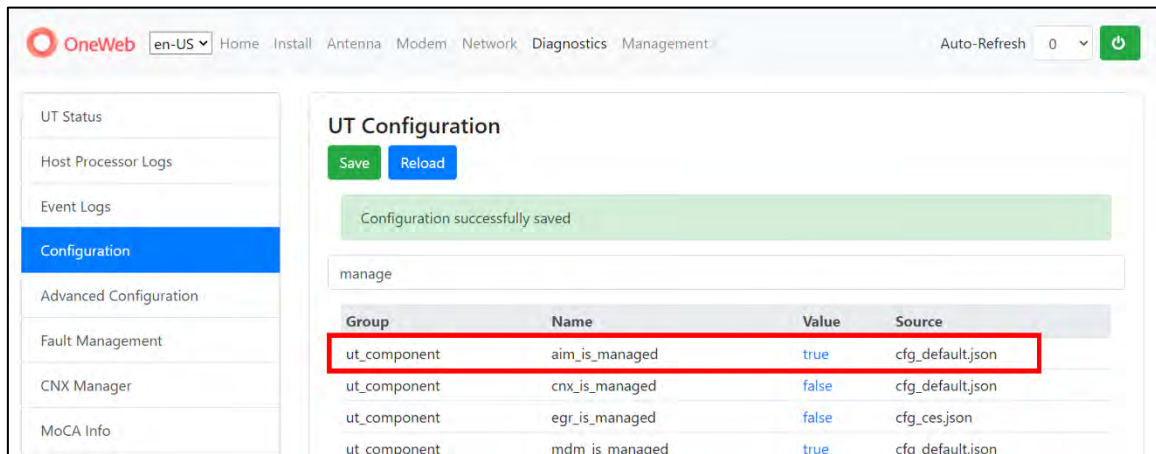
Figure 76: Verify Value of True

10. Once this has been verified, continue with the installation.

11. Go to the LUI main page at **192.168.100.1** and select **Install** from the menu.
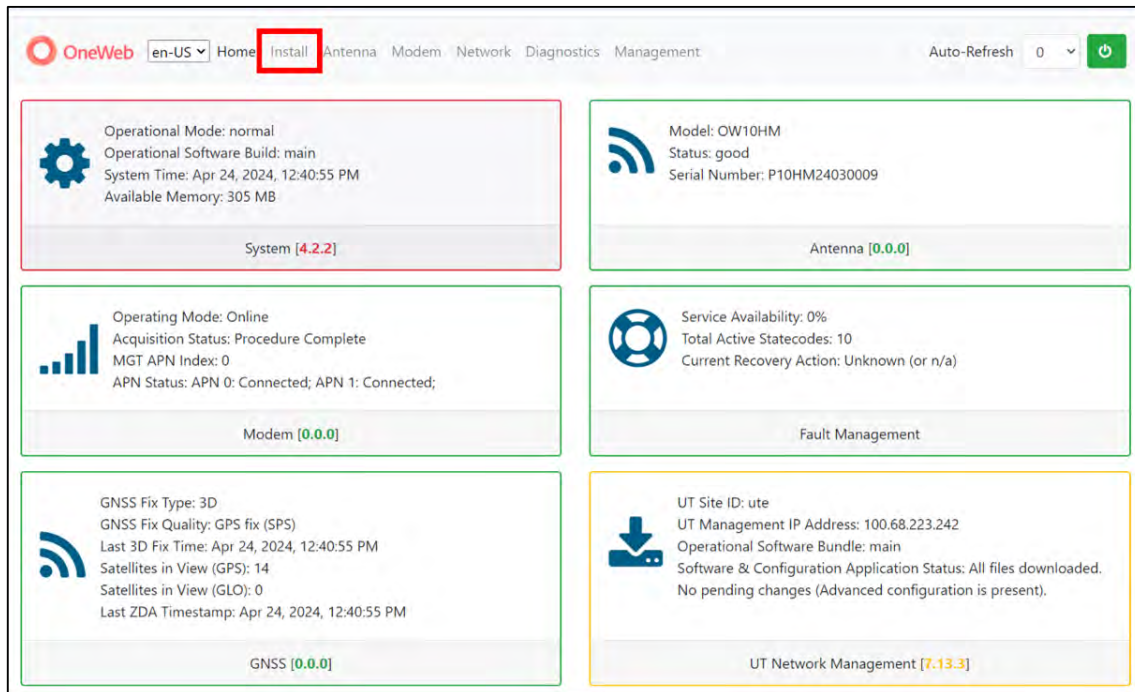
Figure 77: LUI Main Page

12. Select the **Start** button on the Begin Your Installation page.
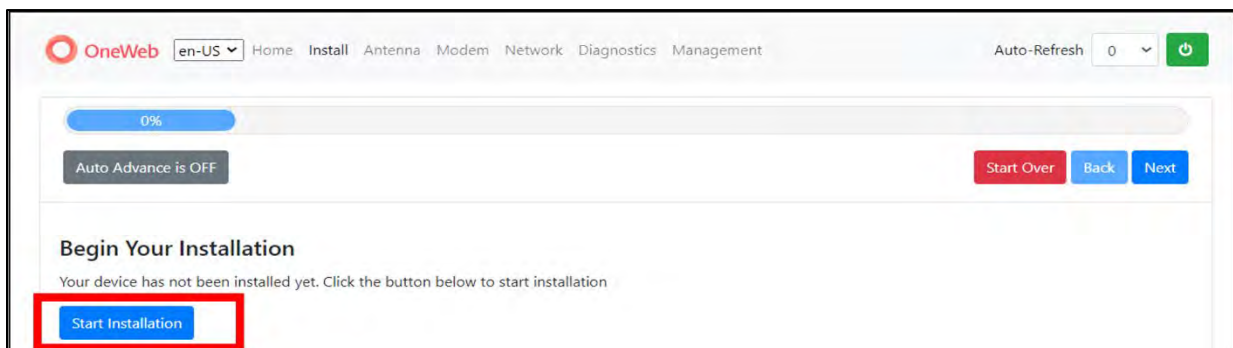
Figure 78: Start Installation

13. The Current Software Bundle Versions will display. Select the desired file using the **Browse** button and then select the **Upload** button on the Upload Software Bundle page.
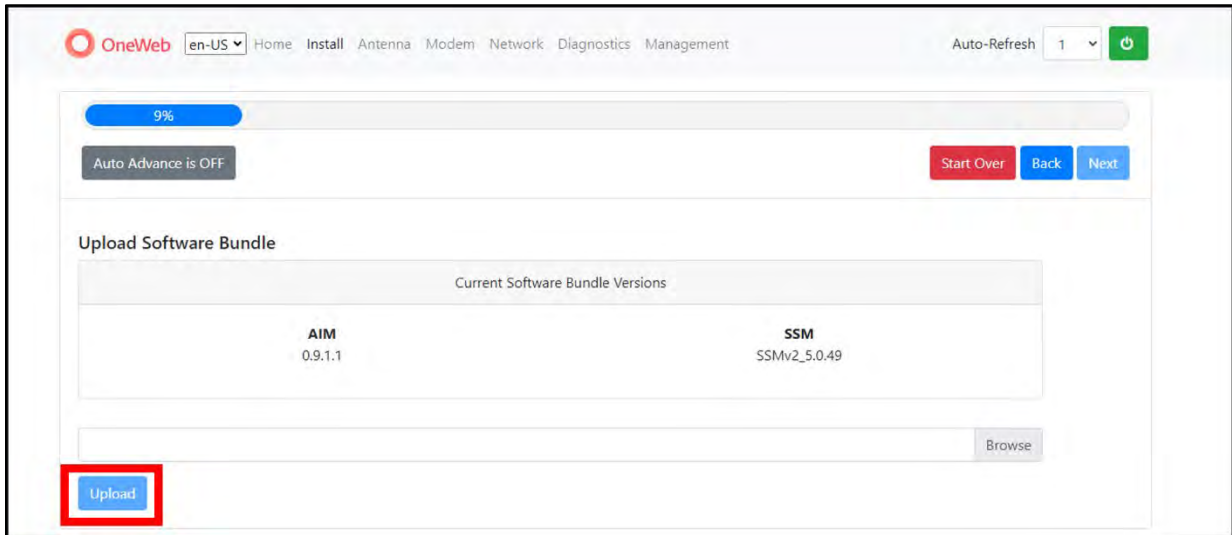
Figure 79: Upload Software

14. Verify the software version. To continue the software installation, select **Yes**.
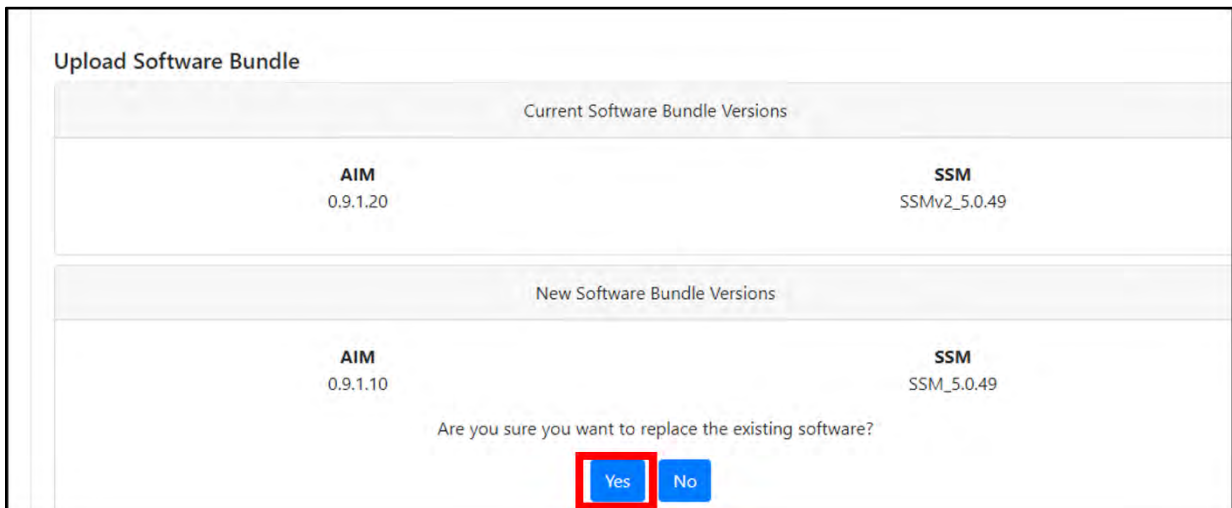
Figure 80: Select Software Version

15. The screen will display the progress of the update and application of new software.
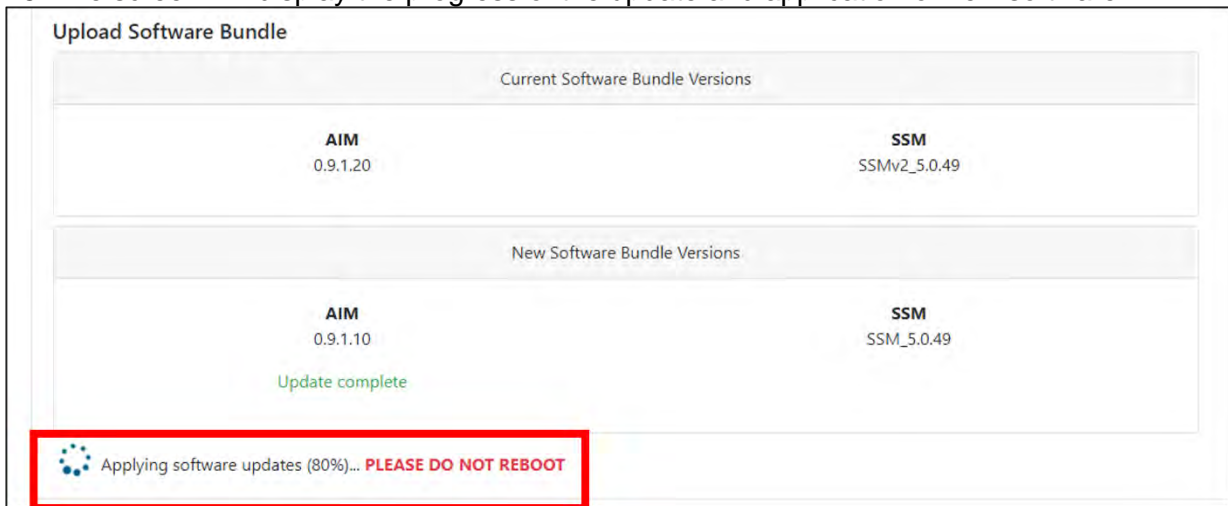
Figure 81: Software Update Progress

16. Once the software has been updated, a "Software has been updated!" message will display. The system will automatically reboot.
17. On power up, return to the LUI Install menu and complete the remaining installation steps by selecting the Next button when prompted.
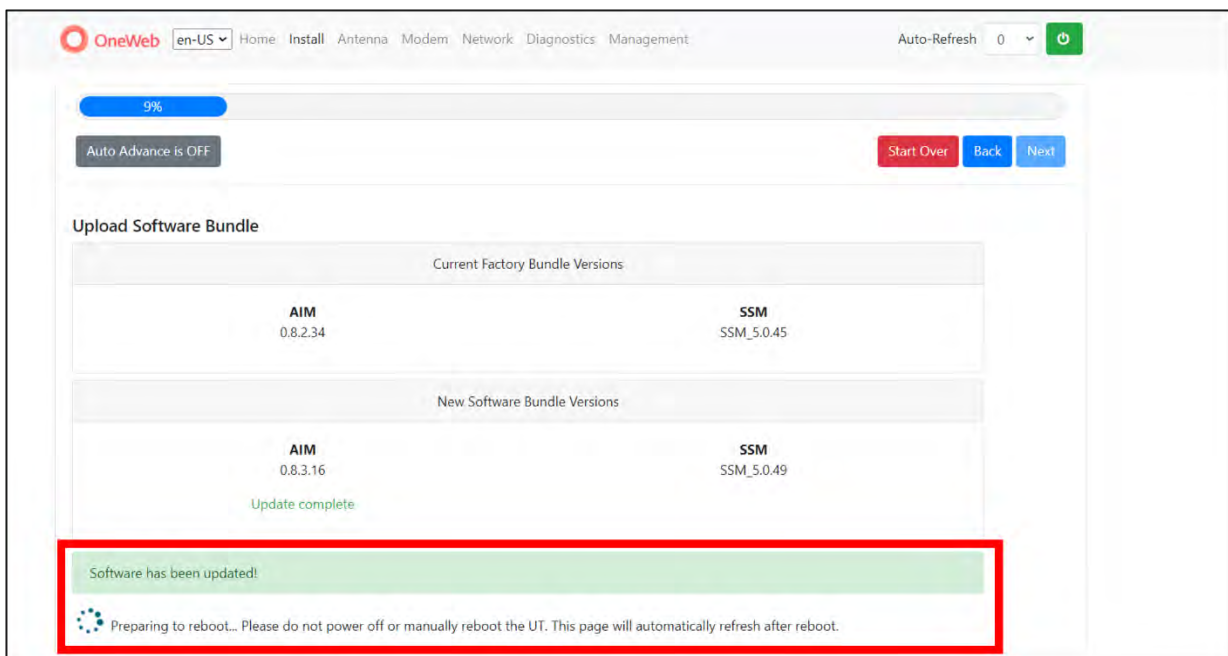
Figure 82: Software Updated

Appendix A: Pre-Installation Checklists

Land Mobility Checklist

This pre-installation checklist describes important considerations before installing the UT. It must be completed by the certified installer to install the UT in a safe location. Please fill out the general information below.

Date of survey	
Date of installation	
Installer information	
Company's name	
Installer's name	
Contact phone number	
Address	
Email	
Customer information	
Organization's name	
Customer's name	
Phone number	
Address	
Email	
Site location (Lat / Long)	
UT type being installed (antenna and CNX-WIFI)	
Site Information	
The proposed antenna mount type is checked.	
The location of the site is checked.	

Land Fixed Checklist

This pre-installation checklist describes important considerations before installing the UT. It must be completed by the certified installer to install the UT in a safe location. Please fill out the general information below.

Date of survey	
Date of installation	
Installer information	
Company's name	
Installer's name	
Contact phone number	
Address	
Email	
Customer information	
Organization's name	
Customer's name	
Phone number	
Address	
Email	
Site location (Lat / Long)	
UT type being installed (antenna and CNX-WIFI)	
Building / Site Information	
The proposed antenna mount type is checked. (Roof Mount / Ground Mount / Ground Level Pole Mount / Pole Mount Bolted to Wall / Custom Mount / Etc.)	
The location of the site is checked. (Urban / Semi-urban / Rural / Remote)	

The following Building / site checklist is to be completed by the installer.

Task description	Yes / No / N/A
External building wall composition is safe to install mount. (If mounted on the building)	
Line-of-sight of the antenna complies with radiation safety.	
There is no unauthorized access.	
Roof space/floor space is suitable for mount type.	
Roof/soil composition is suitable for mount type.	
Lightning protection available.	

Expected obstructions / Possible interference checklist

Task description	Yes / No / N/A
Line-of-site to satellite constellation is verified.	
No interference with RF transmitters.	
No interference from high voltage lines, power cables, and telephone cables.	
No other possible sources of interference.	
Map of no obstruction is reviewed and verified. (Also updated into UT configuration as an array of AZ, EL coordinates.)	

Maritime Checklist

This pre-installation checklist describes important considerations before installing the UT. It must be completed by the certified installer to install the UT in a safe location. Please fill out the general information below.

Date of survey	
Date of installation	
Installer information	
Company's name	
Installer's name	
Contact phone number	
Address	
Email	
Customer information	
Organization's name	
Customer's name	
Phone number	
Address	
Email	
Site location (Lat / Long)	
UT type being installed (antenna and CNX-WIFI)	
Site Information	
The proposed antenna mount type is checked.	
The location of the site is checked.	

The following checklist is to be completed by the installer.

Task description	Yes / No / N/A
Base material is safe to install mount.	
Line-of-sight of the antenna complies with radiation safety.	
There is no unauthorized access.	
Space is suitable for mount type.	
Lightning protection available.	

Expected obstructions / Possible interference checklist

| Task description	Yes / No / N/A
Line-of-site to satellite constellation is verified.	
No interference with RF transmitters.	
No interference from high voltage lines.	
No other possible sources of interference.	
Map of no obstruction is reviewed and verified. (Also updated into UT configuration as an array of AZ, EL coordinates.)	

Appendix B: Installing Land Fixed UT

Land Fixed as having multiple mount options. Several mounting options are available for the Land Fixed UT to meet specific environmental conditions. They all share the same Adjustable Mount Adapter (OW-6017) described in chapter 7.

Installing Non-Pen Mount (NPM) (OW-NPM5-1074-RM)

This accessory is the generally recommended mount.

A rubber mat to put under the NPM is optional.

No	ITEM	DESCRIPTION	Q'ty
1		5/16"-18*3-1/8" hex-head cap screw	5
2		5/16"-18*5/8"Round flat head square screw	2
3		5/16"-18 washer	12
4		5/16"-18 nylon nut	7
5		Ø8.5/Ø12.5*L60 Bush	2
6		5/16"-18x1-1/4" hex flange screw	1
7		5/16"-18 kepts k-lock nut	2

FASTENERS

RECOMMENDED TOOLS

13 mm wrench
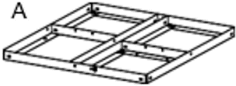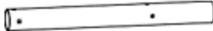
DESCRIPTION	Q'ty	DESCRIPTION	Q'ty	DESCRIPTION	Q'ty
Ground Mounting Base(#A)	1	Mast Pole(#B)	1	Side Supporting Rods(#C)	4

Figure 83: NPM Parts List

NOTE

1. Loosen the ground base 8 bolts.
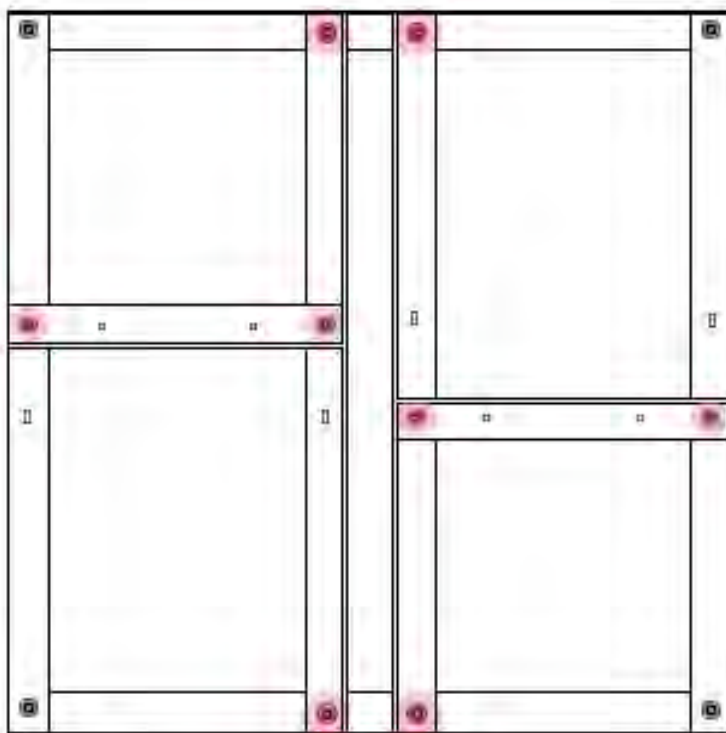
Figure 84: NPM Ground Base

2. Assemble the mast pole with bolt kits.

Mast pole (2" 50A – Out diameter 60.5mm)

Grounding rod

① 5/16"-18*3-1/8" Hex- head cap screw (1 ea.)
③ 5/16"-18 washer (2 ea.),
④ 5/16"-18 Nylon nut (1 ea.)
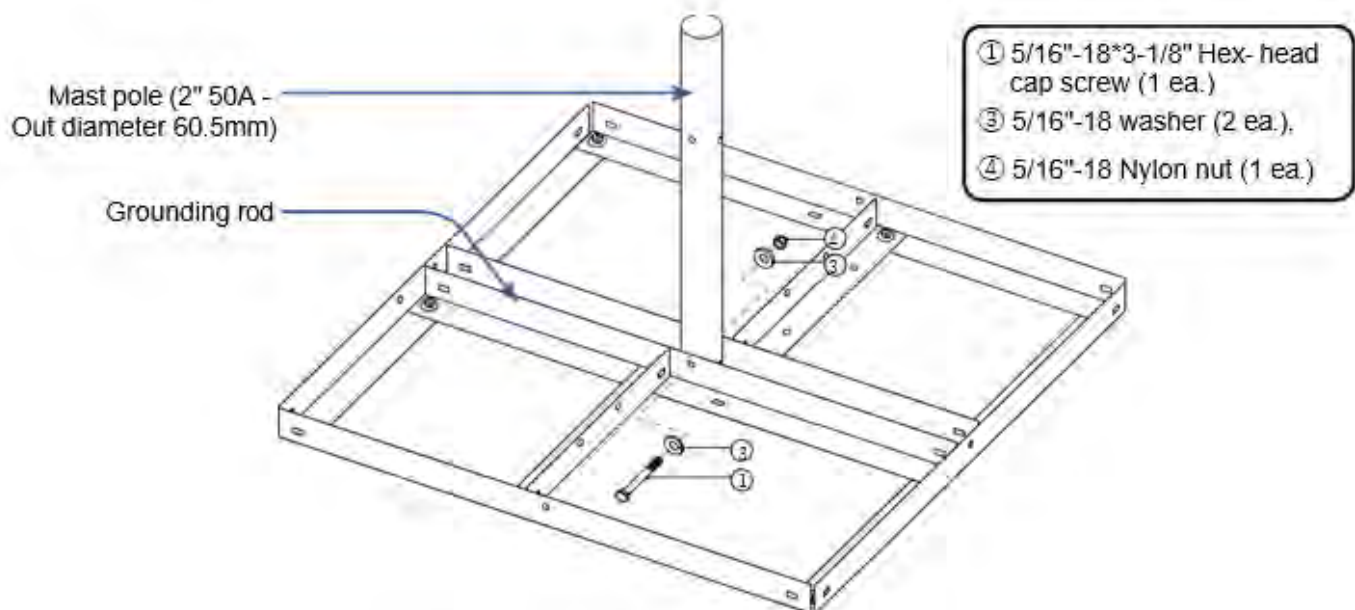
Figure 85: NPM Assemble Mast Pole

3. Assemble two side supporting rods with bolt kits.

① 5/16"-18*3-1/8" Hex- head cap screw (3 ea.)
③ 5/16"-18 washer (5 ea.),
④ 5/16"-18 Nylon nut (3 ea.)
⑤ Bush (Ø8.5/Ø12.5*L60)

Side supporting rod

Adjust the width along with mast pole and side rods tighten 4 screws.
- Suggest torque: 20 N-m
- Max torque: 24 N-m
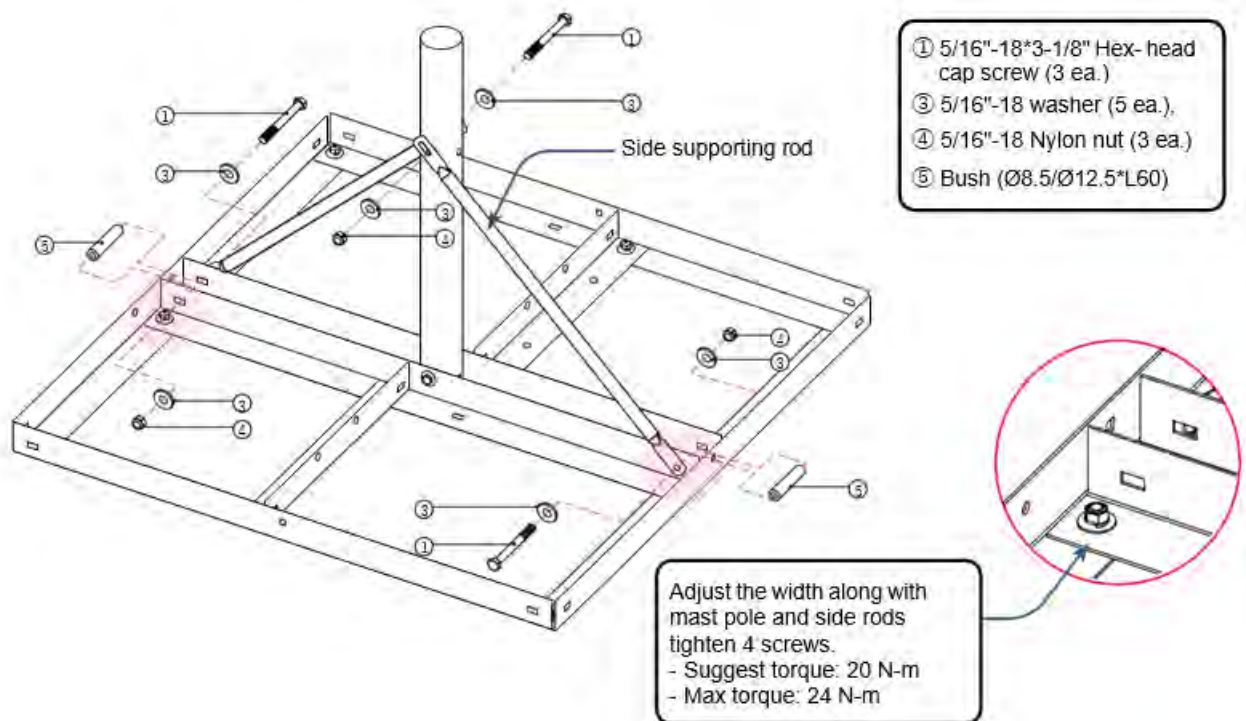
Figure 86: NPM Supporting Rods and Bolts

Side supporting rod

① 5/16"-18*3-1/8" Hex- head cap screw (1 ea.)
② 5/16"-18*5/18" Round Flat head screw (2 ea.)
③ 5/16"-18 washer (4 ea.),
④ 5/16"-18 Nylon nut (3 ea.)

Adjust the width along with side rods tighten 4 screws.
- Suggest torque: 20N-m
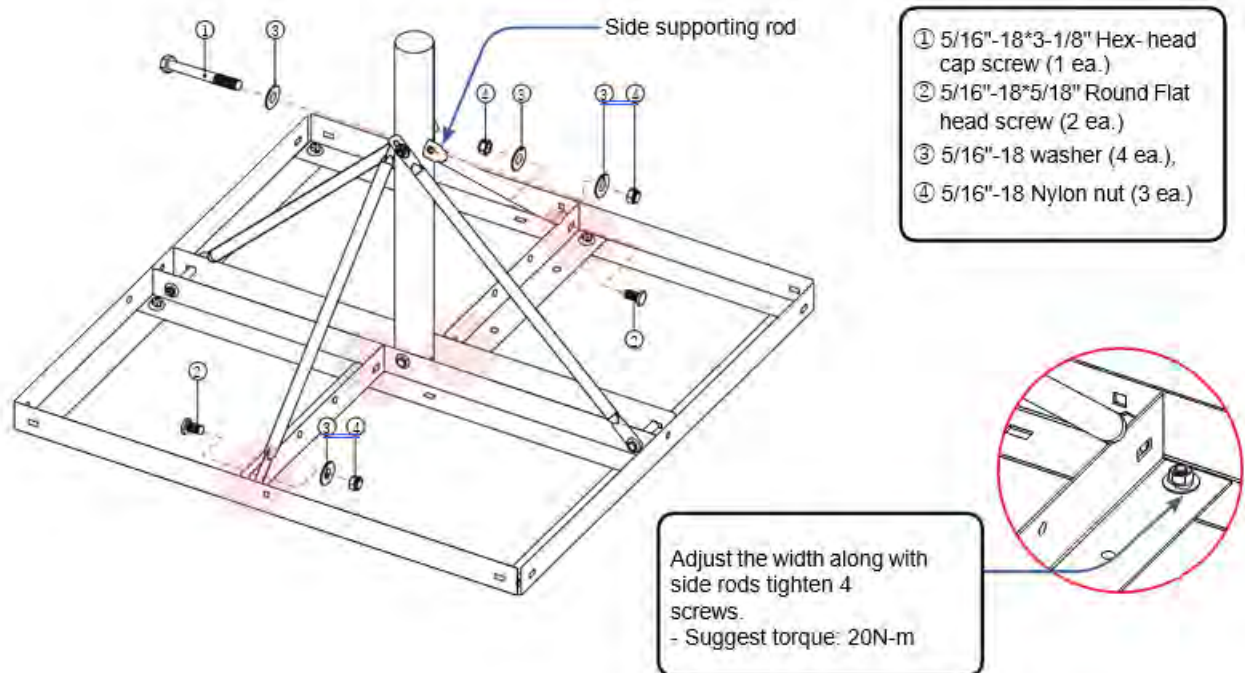
Figure 87: NPM Supporting Rods

4. Assemble ground cable with bolt kits.
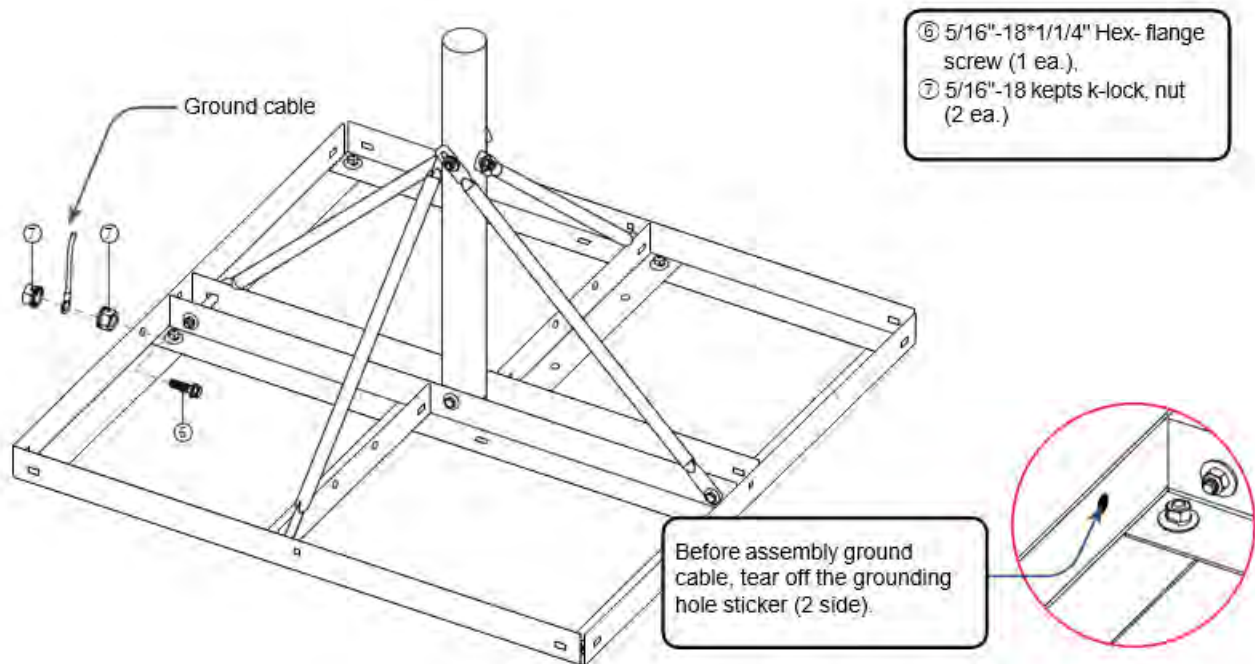
Figure 88: NPM Ground Cable

5. Place the concrete blocks on the base panel to hold the weight of the antenna. One concrete block is 39 cm. x 19 cm. x 19 cm. (15.25 in. x 7.5 in. x 7.5 in.) and weighs 17.5 kg. (39 lbs.). The area of the assembled base panel is 200 cm. x 90 cm. (78.7 in. x 35.4 in.).

Arrange 8 concrete blocks on the base panel in a single layer. The total weight of 8 concrete blocks is 140 kg (~ 310lbs.).
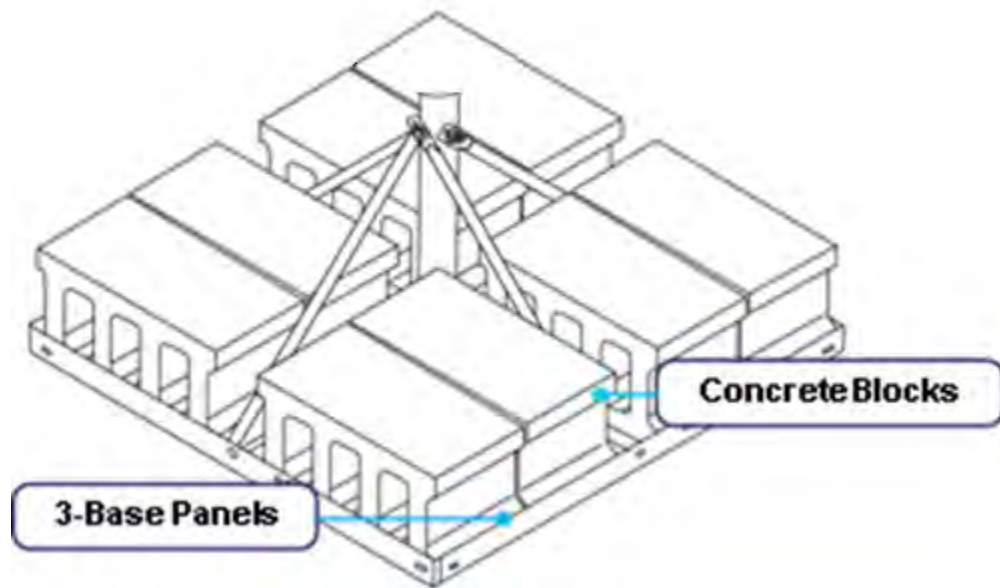
Figure 89: Concrete Blocks Arrangement

NOTE	If you want to use alternative weights instead of concrete blocks as shown above, ensure sure that total weight of the alternative meets required evenly distributed weight, 140 kg. (~ 310 lbs.).

Installing a TriMast Mount (OW-6012)

The TriMast mount is an alternative accessory to the Non-Penetrating Mount. It can be installed on a vertical, horizontal, or inclined surface (see figure 26). Verify the parts in the shipping box.

TriMast parts

No.	Description	Quantity
1	Mast	1
2	Roundhead bolt and flange nut	1
3	Adjustable strut – left	1
4	Adjustable strut - right	1
5	Anchor screw 3"	6
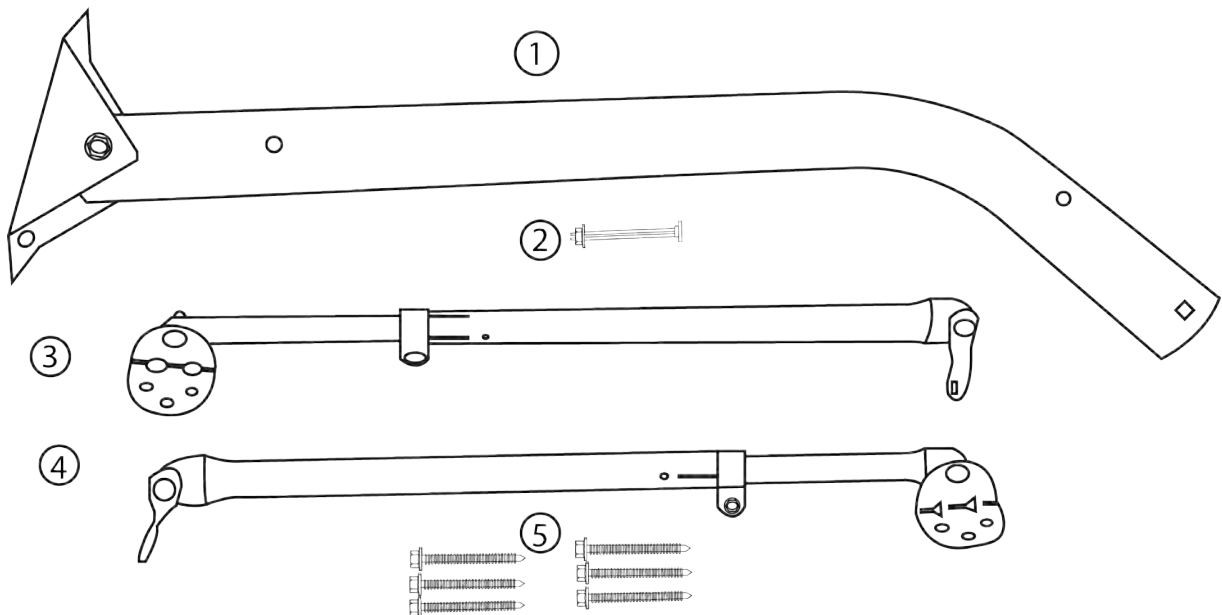
Figure 90: TriMast Parts

Assembly tools required

- ½" wrench

Assembly steps

1. Fix the mast ① to the chosen surface using two anchor screws ⑤.
2. Attach each adjustment strut ③ and ④ to the mast ①, securing it in place with the roundhead bolt and flange nut ②. Ensure the orientation of each strut matches the image below when viewed from the outer bent portion of the mast. See figure 91.
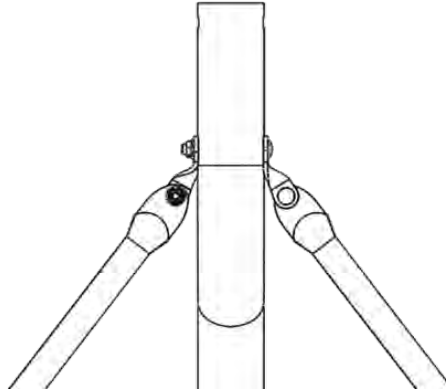
Figure 91: Attach Mast and Adjustment Struts

NOTE	Ensure that the feet of the struts are facing the same direction before anchoring them to the ground.

3. Adjust the mast ① perpendicular to the ground and then extend each strut ③ and ④ so both feet are contacting the mounting surface. Ensure both struts are in line with one another, and parallel to the base mount as shown below before tightening in place.
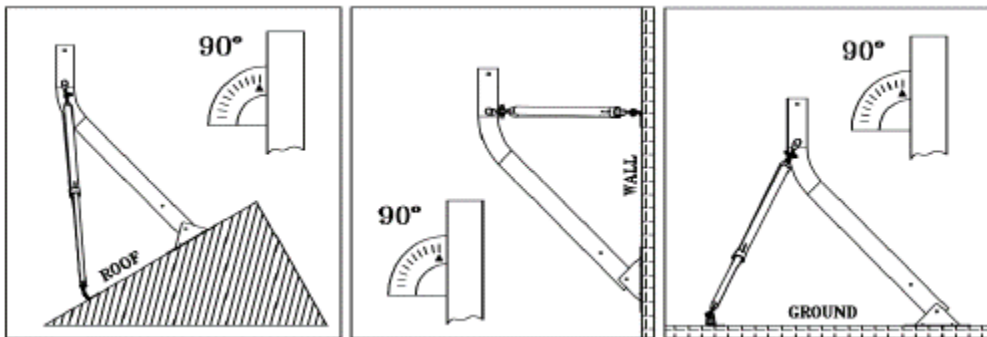
Figure 92: Completed Installation Positions

4. Secure each strut to the mounting surface using two anchor screws per strut ⑤.
5. Tighten all hardware with sufficient force to ensure maximum strength of the installation.

Installing a Quadpod Mount (OW-6011)

This mounting alternative is intended for horizontal surfaces and can be anchored through holes in the feet. Verify the parts in the shipping box.

Quadpod parts

No.	Description	Quantity
1	Mast	1
2	Foot	4
3	Stand	1
4	Stand cover	1
5	M8 x 4 mm screws	4

Assembly tools required

Figure 93: Quadpod Parts

- M8 Allen wrench (not supplied)

1. Slide foot ② onto the lower half of the stand until it is flush with the stand ③ and the hole for the screw is visible.
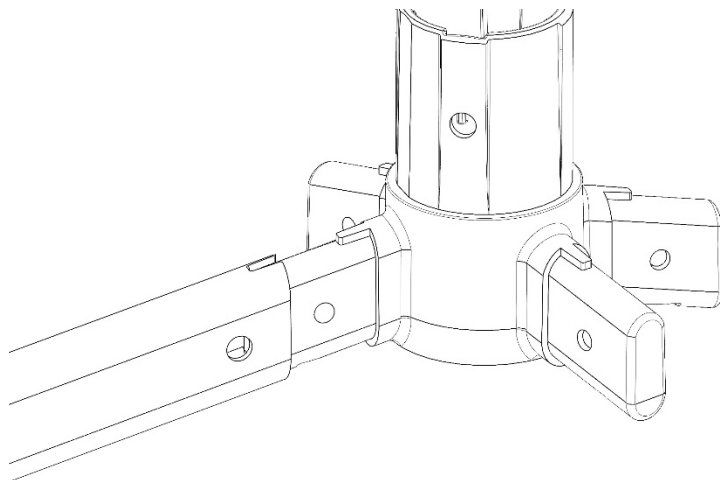
Figure 94: Attach Foot

2. Using a M8 Allen wrench and 4 mm. screw ⑤, fasten the foot onto the stand.
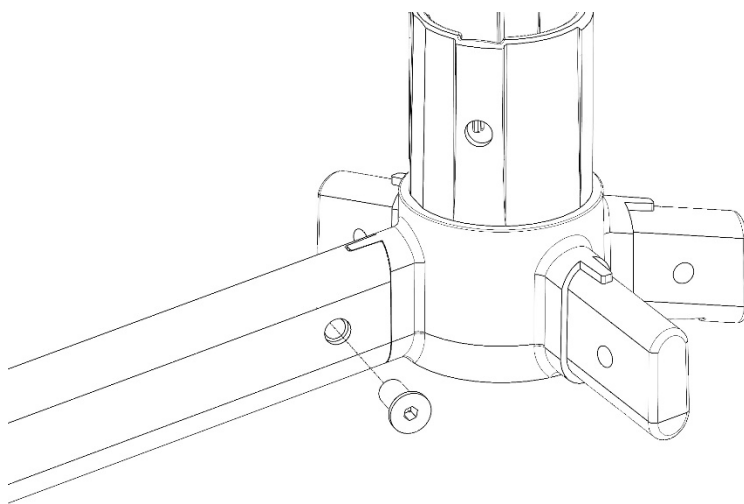
Figure 95: Screw Foot to Stand

3. Repeat steps 1 and 2 until all four feet are attached to the stand.

4. Once the feet are attached, attach the mast ① to the stand ③. Slide the holes in the mast over the spring plungers until secure.
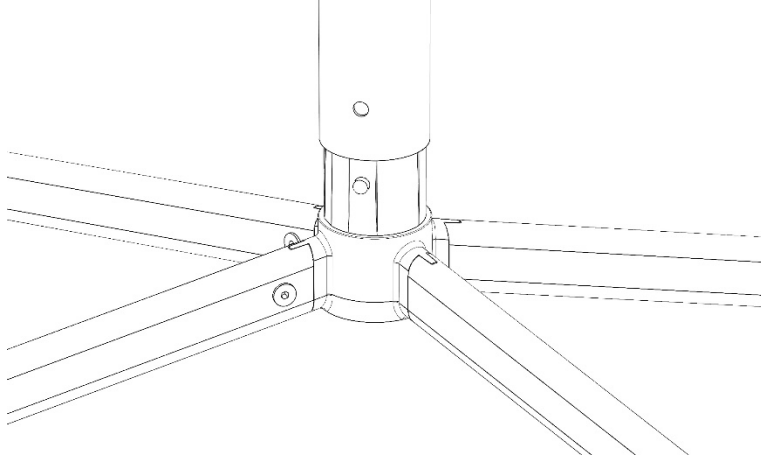
Figure 96: Attach Mast to Stand

5. Put the stand cover ④ over the mast ① until flush with the feet.
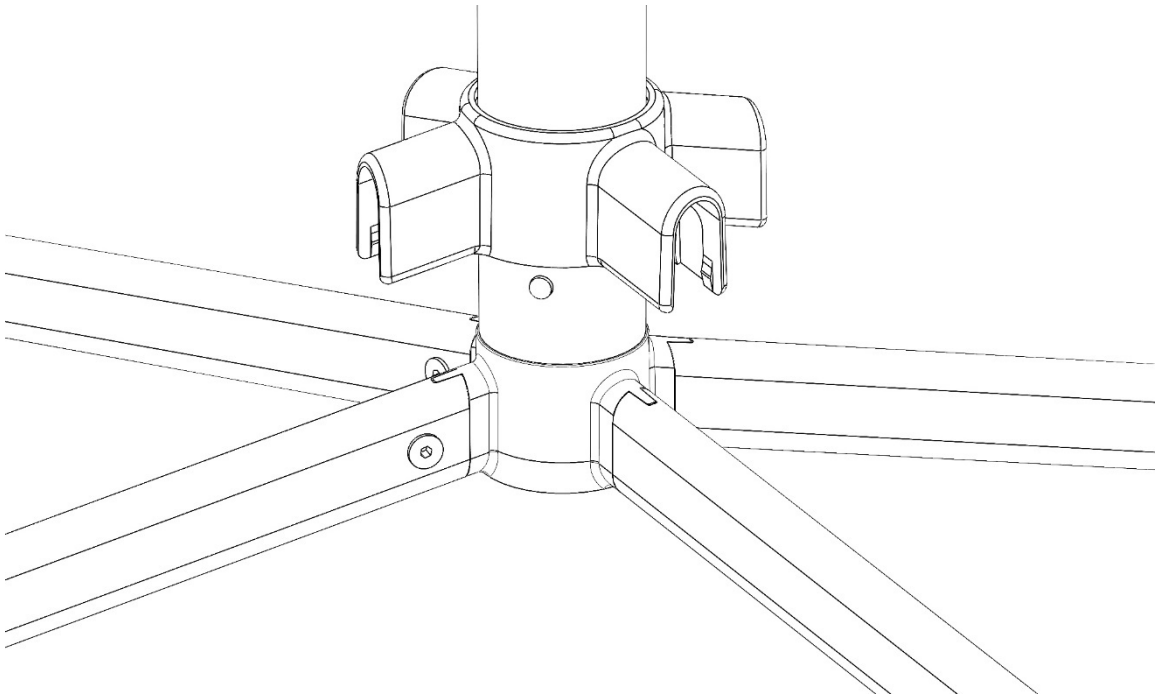
Figure 97: Placing Stand Cover Over Mast

6. Screw the hex bolt into the mast.
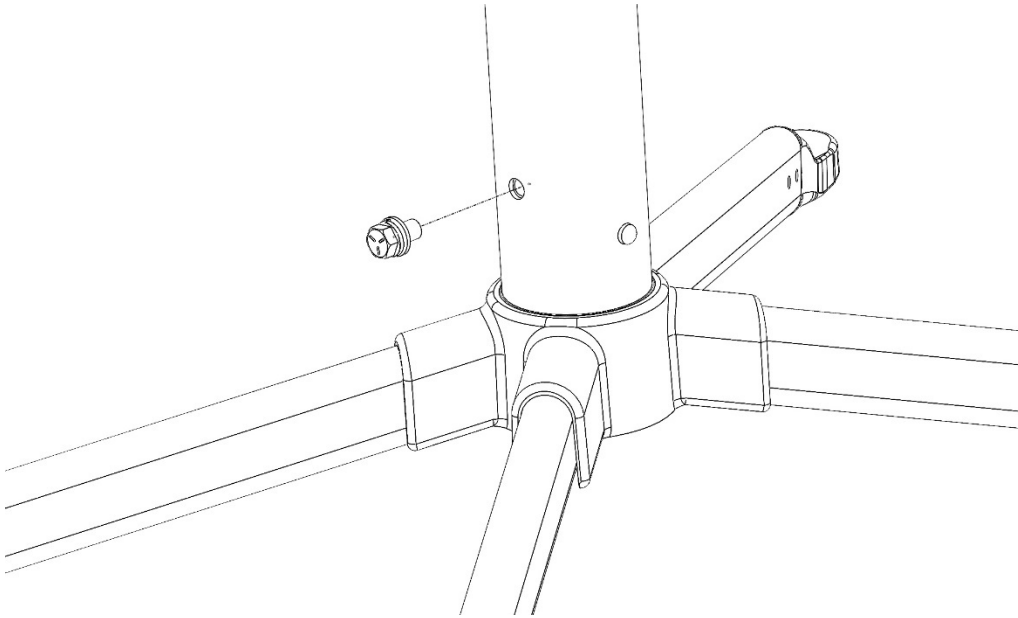
Figure 98: Insert the Hex Bolt to Mast

7. If desired, secure the mount by installing appropriate anchors (not provided) through 9 mm. holes in the feet (Recommend M8 bolts).
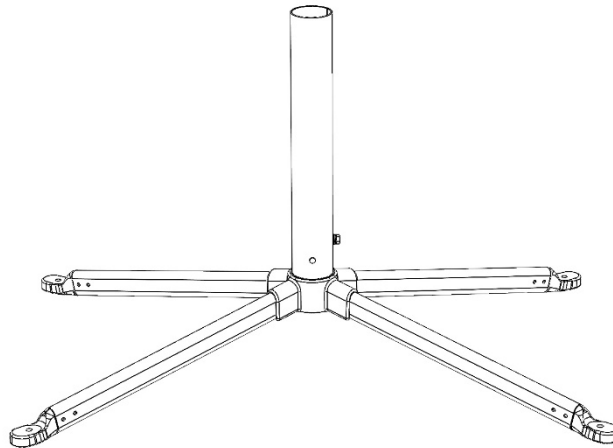
Figure 99: Assembled QuadPod

Installing Customized Pole Mount

Customized pole mounts must be correctly installed to be robust enough to prevent any flex, vibration, and sway when an external force is exerted with the antenna attached.
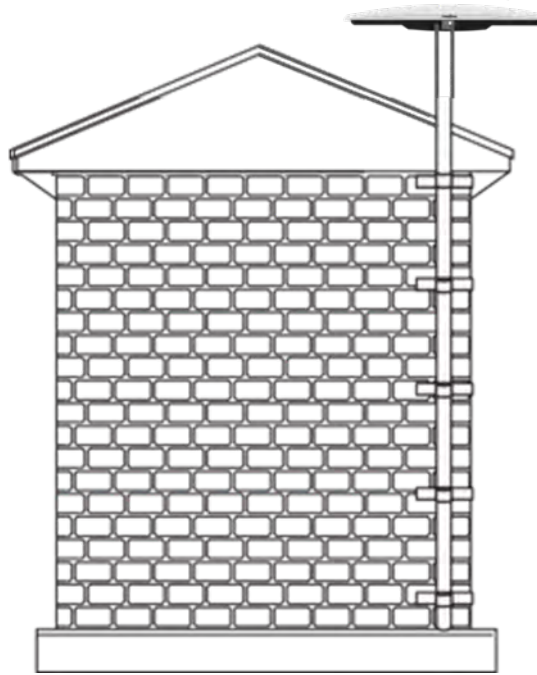
Figure 100: Customized Pole Mount Installation Example

Designing the customized pole mount

When designing the pole consider the pole types and their maximum length. The Fixture Distance describes the fixtures with distance between them. Refer to the following table for more details.

Pole Type	Pole Diameter	Pole Thickness	Max Length (Ⓐ)	Fixture Distance
50A	60 mm (2.4")	2 mm (0.1")	500 mm (19.7")	400 mm (15.8")
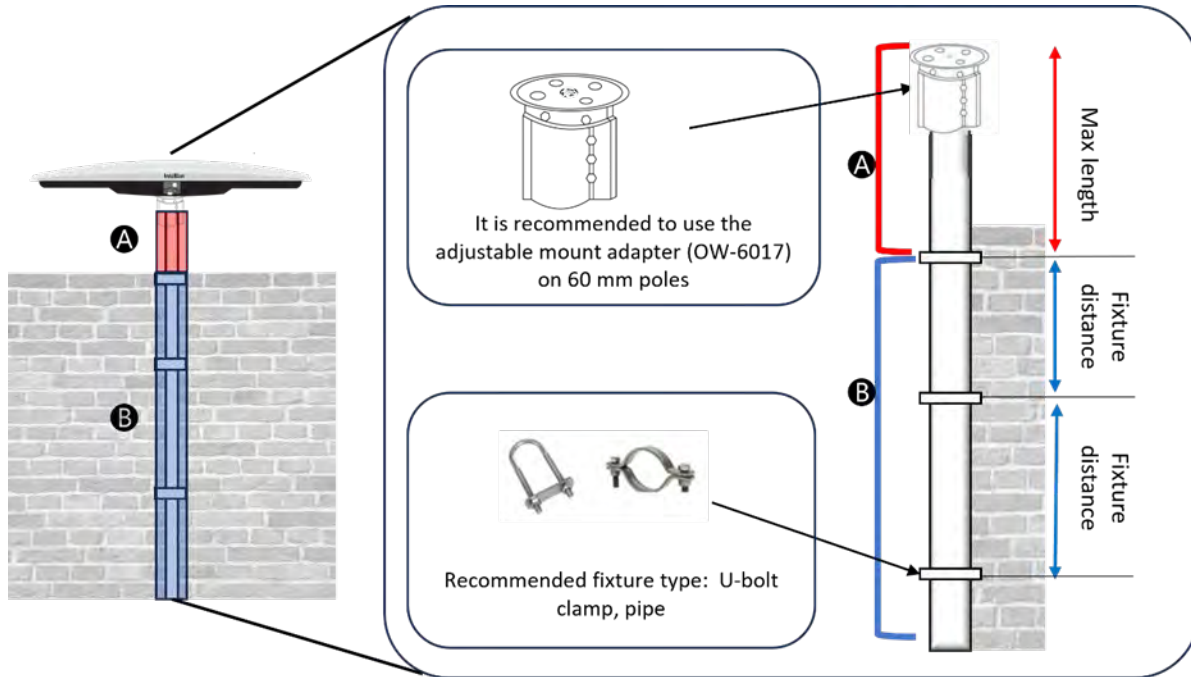
Figure 101: Customized Pole Mount Details

- For example, if using 50A of pole type for the antenna installation, maximum length of Ⓐ cannot exceed 500 mm remaining pole, Ⓑ should be fixed with minimum 3 pcs of fixtures and the distance among them should be 400 mm.
- The Max Length of Ⓐ is the length without the additional Ⓑ to use the tilt adjustable mount adapter, it is recommended using a pole type 50A. To use the recommended. To use the recommended Ⓐ pole type 50A, the maximum length should be 500mm. If the pole type is different from the recommended type, check the maximum length for a pole type according to the table.
- There are no Ⓑ pole length limits but it must be installed on a place of sufficient structural integrity to prevent any flex, vibration and sway from such wind or external force. The Ⓑ pole can be used as a thicker pole type than the Ⓐ pole. The fixtures should be installed at recommended intervals (see the Fixture Distance from Figure 100: Customized Pole Mount Details). Recommended fixture types are a U-bolt and a pipe clamp.
- We recommend using the adjustable mount adapter to adjust the tilt level. (Refer to Attaching Antenna to Adjustable Mount Adapter on page 16.)

Appendix C: Labels

OW1Fx Equipment Label
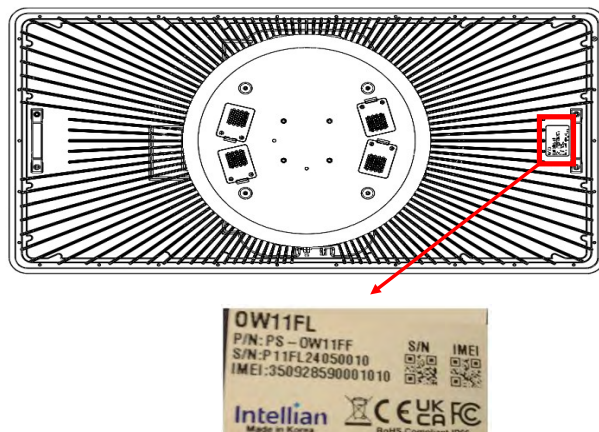
Figure 102:OW11Fx Label

CNX-WIFI Equipment label
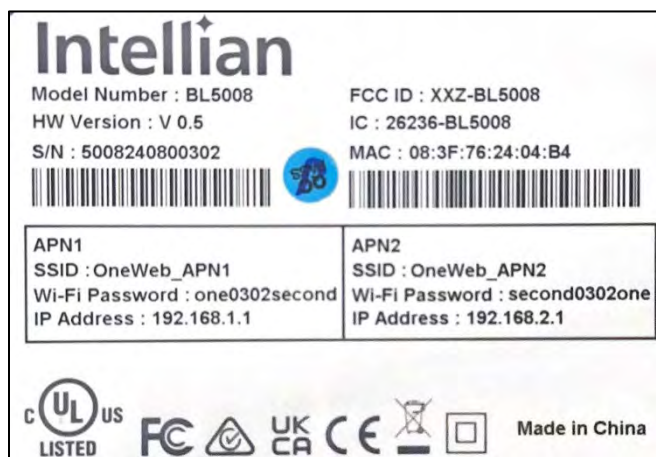
Figure 103: CNX-WIFI Label

Appendix D: Supported Cable Lengths

Supported Cable Lengths

Coaxial Cable Type	Part Number	Connector Type	Recommended Max. Cable Length
RG6	Belden 1694A	UNC N-006AT-CP-0	30 m. (98.5 ft.)
RG6	D06AQBT600O21UBK2A	UNC N-006AT-CP-0	30 m. (98.5 ft.)
RG11	011177T04BK401HN10R1	Holland SLCU-11Q	85 m. (279 ft.)
RG11	011WTBA950EO1UBKXA	Holland SLCU-11Q	75 m. (246 ft.)
LMR400, 50 Ohm	LMR-400-FR-BULK	(TMS) Amphenol EZ-400-NMH-X	145 m. (476 ft.)
LMR600, 50 Ohm	LMR600	(TMS) Amphenol EZ-600-NMH-X	260 m. (853 ft.)

Appendix E: Using the R-GNSS Feature

Intellian's flat panel series offers the ability for an external GNSS input via an SMA connection. It is ideal for use in GNSS denied environments or when jamming may be present.

The user terminal will ship with a jumper cable connecting each of the SMA ports to utilize the R-GNSS input. Disconnect the end of the jumper cable that is connected to the SMA connector with the input logo next to it. Connect the external GNSS system that utilizes L1 or L5 input via the same SMA connector with the input logo. Ensure the jumper cable is not damaged as this will need to be reattached and utilized for future non-GNSS use.
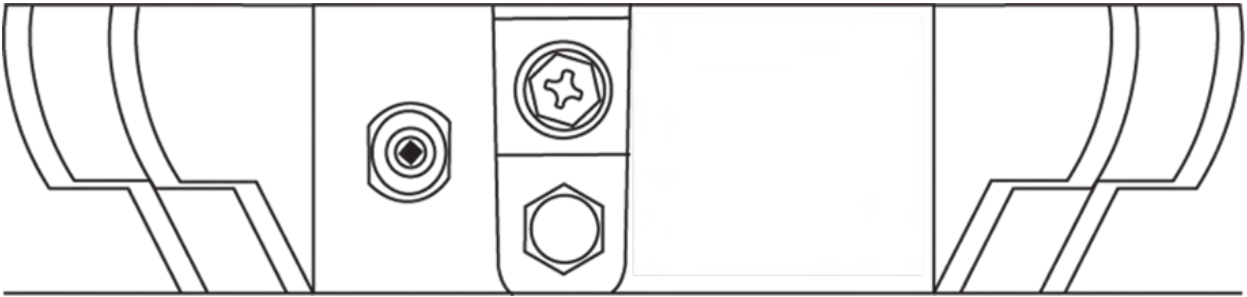
Figure 104: Antenna Connecters

Appendix F: Global Support, Warranty, and Maintenance

Global Warranty

Intellian provides industry-leading warranties to customers and end-users, fully supported by our qualified field service engineers and service partners.

Intellian systems are warranted against defects in parts and workmanship, these warranties cover one year for parts and one year of factory repair labor to return the systems to the original specification.

Warranty periods start on the date of activation or six months from shipment, whichever is sooner.

For more details, including terms and conditions, please visit Intellian Standard Global Warranty.

Maintenance

- Keep antenna fans and the CNX-WIFI unit free of dust as much as possible.
- Dispose of the unit following the local recycling rules and regulations.

Fan Replacement

1. Locate the fan that needs to be replaced.
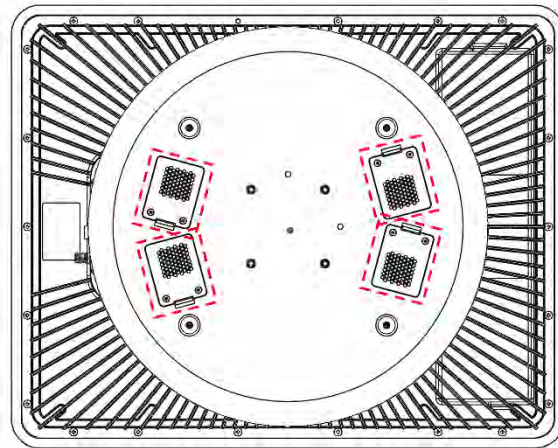
Figure 105: Fans Location

2. Turn fastener ¼ turn counterclockwise to release from the fan that is to be replaced
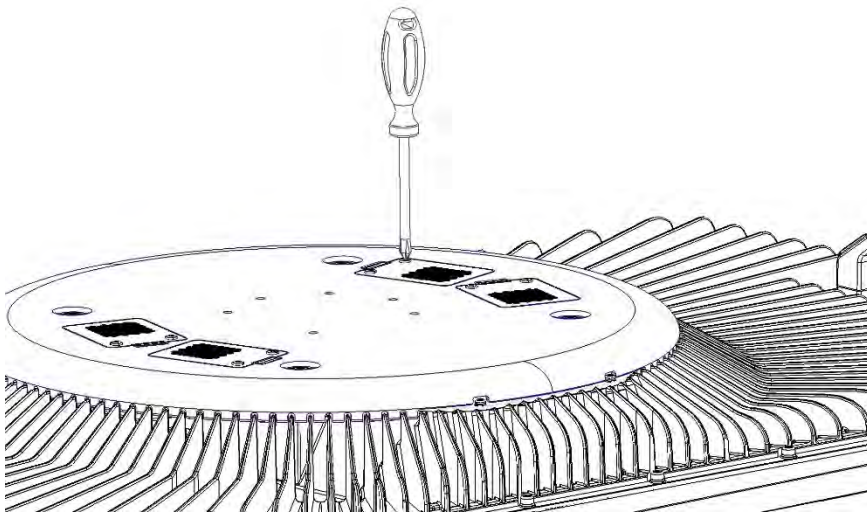
Figure 106: Fan Removal

3. Unclip the fan and remove it from the antenna.
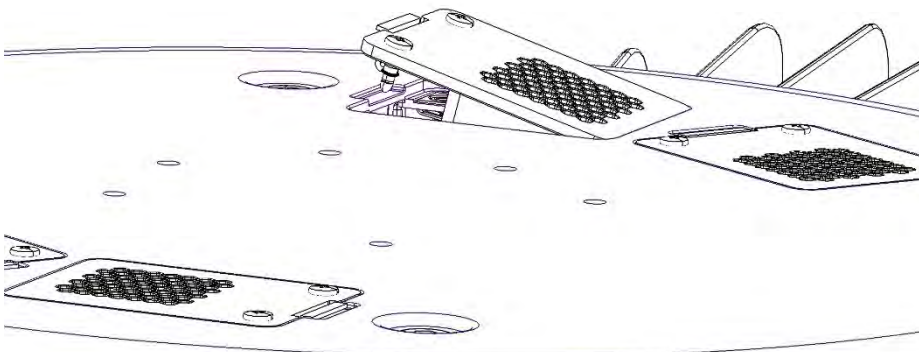
Figure 107: Unclip Fan

4. Lift up the front and move forward to clear the flange and then pull up.
5. Disconnect fan cable from the antenna.
    o Push in latch.
    o Separate connectors.
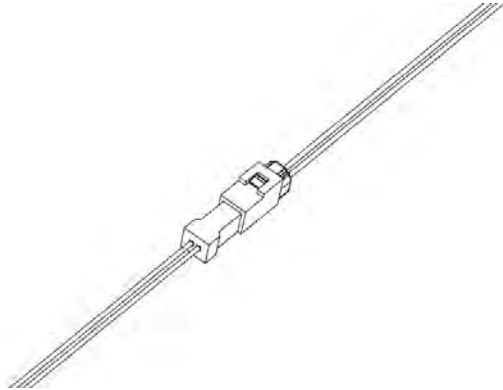
Figure 108: Disconnect Fan

6. Connect the new fan to the cable.
7. Place fan back into the antenna.
8. Turn the two fasteners ¼ turn clockwise to secure fan.

Hydrophobic Coating Maintenance Recommendations

The following recommendations are for how to handle a hydrophobic radome:

- If handling objects coated with the hydrophobic frequently, wear nitrile or latex gloves.
- A whitish coating may come off onto anything coming into contact with the treated surface. This whitish material is excess Top Coat particles that did not bond to on the Bottom Coat. Due to the natural oils in the skin, excessive handling with bare hands of treated materials can cause a reduction in performance.
- The coating will repel clean water and some water-based liquids once installed.

Cleaning of the surface should be performed using low pressure water spray (less than 30 psi or typical garden hose pressure without any nozzle). The surface should demonstrate self-cleaning properties under these conditions. Dust and dirt should rinse off easily. The surface will lose its properties if treated with detergents, soap, solvents or high-pressure water.

Appendix G: Standards and Compliance

FCC Statement

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.

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

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.

Intellian

Declaration of Conformity (DoC)

We, Intellian Technologies, Inc. located at 18-7, Jinwisandan-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do 17709, Korea declare under our sole responsibility that the products below, to which this declaration relates, are in conformity with the *essential requirements* and *other relevant requirements* of the standards listed below for **CE**.

Product Information:

Product Name(s):	OW11Fx (OW11FL, OW11FV, OW11FM)

Category	Standard(s) Applied in Full	Test Report Number	Result
CE-SAFETY (Art 3.1.a)	EN IEC 62368-1:2020 + A11:2020	MET 132223[1]	Pass
CE-EMC (Art. 3.1.b)	EN 55032 (2015) /A11(2020)	4493ERM.001[2]	Pass
	CISPR 32:2015+A1:2019		
	EN 55035 (2017) /A11(2020)		
	ETSI EN 301 489-1 V2.2.3 (2019-11)		
	ETSI EN 301 489-12 V3.2.1 (2021-11)		
	EN 61000-3-2		
	EN 61000-3-3		
	EN 62311: 2008	WIR132223-EN62311_50383_50385[1]	Pass
	EN IEC 62311:2020 per 2014/53/EU RED		
	EN 50385		
CE-RED SPECTRUM (Art. 3.2)	ETSI EN 303 980 V1.2.0 (2021-02)	WIR132223-ETSI303[1]	Pass
Maritime navigation and radiocommunication equipment and systems	IEC 60945 (2002-08)	4493ERM.002[2]	Pass
Surge Immunity	EN 61000-4-5, Surge Immunity	4493ERM.001[2]	Pass

Supplementary Information:

Testing Organization	(1)Eurofins Electrical and Electronic Testing NA, Inc. 914 West Patapsco Avenue Baltimore, MD 21230 (2)DEKRA Certification, Inc. 405 Glenn Dr. Suite 12, Sterling, VA 20164
Technical/Compliance File Held by:	Intellian Technologies, Inc. 18-7, Jinwisandan-ro, Jinwi-myeon, Pyeongtaek-di, Gyeonggi-do 17709 Korea

Authority: Dojun Byun / SVP R&D, CTO   Signature: _____

CE

Date: _____ July 2, 2024

Intellian

Declaration of Conformity (DoC)

We, Intellian Technologies, Inc. located at 18-7, Jinwisandan-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do 17709, Korea declare under our sole responsibility that the product(s) described in the below to which this declaration relates is in conformity with the following requirements.

Product Information:

Product Name(s):	OW11Fx (OW11FL, OW11FV, OW11FM)

The following harmonized standards and other technical specifications were used in support of this declaration:

Standard(s) Applied	Test Items	Clause	Test Report No.	Result
IEC 60529:1989+A1:1999_A2:2013	Test for protection against access to hazardous parts (IP6X)	Refer to 5.6	OT-246-RRK-029	Pass
	Test for protection against solid foreign objects (IP6X)	Refer to 6.4		
	Test for protection against water (IPX6)	Refer to 7.4		

Supplementary Information:

Testing Organization	ONETECH Corp 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do 12735,Korea
Technical/Compliance File Held by:	Intellian Technologies, Inc. 18-7, Jinwisandan-ro, Jinwi-myeon, Pyeongtaek-di, Gyeonggi-do 17709 Korea

Authority: Dojun Byun   Signature: _____

/ SVP R&D, CTO

Date:_____July-02-2024_____

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Declaration of Conformity (DoC)

We, Intellian Technologies, Inc. located at 18-7, Jinwisandan-ro, Jinwi-myeon (Chungho-ri), Pyeongtaek-si, Gyeonggi-do 17709 Korea declare under our sole responsibility that the products described below, to which this declaration relates, are in conformity with the *essential requirements* and *other relevant requirements* for **FCC Part 15 Subpart B**.

Product Information:

Product Name(s):	OW11Fx (OW11FL, OW11FV, OW11FM)

Test Result

Standard	Requirement	Rule Section	Test Report Number	Result
• FCC Rules and Regulations CFR 47, Part 15, Subpart B (2023) • ICES-003 Issue 7 (October 2020)	Conducted Emission	ANSI C63.4 - (2014)	4493ERM.003	Pass
	Radiated Emissions	ANSI C63.4 - (2014)		Pass

Supplementary Information:

Testing Organization	DEKRA Certification, Inc. 405 Glenn Dr. Suite 12, Sterling, VA 20164
Technical/Compliance File Held by:	Intellian Technologies, Inc. 18-7, Jinwisandan-ro, Jinwi-myeon, Pyeongtaek-di, Gyeonggi-do 17709 Korea

Authority: Dojun Byun   Signature:

                         / SVP R&D, CTO

FC

Date: **July-02-2024**

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