MBW 3100

Installation Guide

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Trademarks and Licensing Agreement

GoNet Systems Ltd.

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FCC Compliance Status

The following information is for FCC compliance:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following 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.

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment, this equipment generates, uses, and radiates radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference. However, there is no guarantee that interference will not occur.

To meet regulatory restrictions, the outdoor access point must be professionally installed.

The Part 15 radio device operates on a non-interference basis with other devices operating at this frequency when using its antennas. Any changes or modifications not expressly approved by GoNet Systems could void the user's authority to operate the equipment.

The antennas used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Table of Contents

Introduction

GoNet Systems' MBW 3100 unit is a key enabler for the Metro Broadband Wireless (MBW) Solution. GoNet Systems' Cellular Wi-Fi architecture offers a novel topology for metro Wi-Fi networks, which relies on the strengths of innovative XRF™ architecture. This architecture provides the coverage, capacity, and scalability required to deliver next-generation services and overcome the limitations of existing metro Wi-Fi solutions.

The GoNet Systems' Cellular Wi-Fi architecture is a highly scalable Micro/Pico topology which provides unprecedented flexibility to service providers deploying Metro Wi-Fi networks.

Key Product Features

- Robust IP67 rated weather-proof extended Wi-Fi solution
- Separate access & backhaul radios delivering unmatched bandwidth
- xRF™ smart antenna engine for unmatched (120°) coverage and capacity enhancements
- Optional advanced automatic mesh
- Designed for streetlight, wall, or pole deployment
- Client/WDS based CPE connection
- Support for all standard security scheme

Organization of this Document

The MBW 3100 Installation Guide for the Wi-Fi Sector Base Station offers information and instructions for quickly installing and configuring the MBW 3100. The instructions and information are presented in one volume as follows:

Introduction	Contains introductory information about the MBW 3100.
MBW 3100	Presents a general description and overview of the MBW 3100 including content and safety procedures.
Installation Process	Describes the installation process for the MBW 3100.
Appendix A	Lists the acronyms that appear in the manual.
Appendix B	Details the wiring specifications.

The MBW 3100 complements the MBW 1100 and MBW 2100. It is a sector single-radio weather-proof base station intended for street-level light-pole/utility pole Wi-Fi applications.

The MBW 3100 is equipped with one xRF™-powered beamforming 802.11b/g radio for high-performance access and coverage. Some MBW 3100 models also include an additional 802.11a radio for high-performance, self-assembling, self-healing mesh backhaul.

MBW 3100 Package Components

The MBW 3100 package items are listed in Table 1:

DESCRIPTION	QTY
Wall/Pole Mount Kit Assembly (new)	1
Connectors Kit for MBW 3100 Package	1
MBW 3100 unit	1
Optional Antenna Kit 802.11a 5Ghz 10dBi Omni Mesh Antenna P/N: MBW-ANT-5810 (5.8Ghz) or P/N: MBW-ANT-5410 (5.4Ghz)	1
Optional Power Injector with power cable	1

Table 1: MBW 3100 Package Contents

Deployments of gateway devices connected by wire to an indoor switch/router would include installation of a lightning protector. A lightning protector is not supplied as part of the standard package. It can be ordered from GoNet Systems as an accessory.

Specific installation may require different Power/Ethernet connections. See Cable Connections for more details.

MBW 3100 Safety Information

RF Exposure

The MBW 3100, an outdoor access point, is compliant with the requirements set forth in CFR 47 section 1.1307, addressing RF Exposure from radio frequency devices as defined in OET Bulletin 65. The outdoor access point antennas should be installed to provide a separation distance of at least 3 feet (1 meter) from humans.

Note: The antenna(s) used for this transmitter must be fixed-mounted on indoor or outdoor permanent structures with a separation distance of at least 40 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

MBW 3100 Lightning Protector

A lightning protector is required when the MBW 3100 unit is installed in an outdoor location and the Ethernet cable connects to an indoor network device.

The purpose of the lightning protection is to protect people and equipment located indoors from lightning that might strike the MBW 3100 or its outdoor cables. Therefore, the lightning protector device should be installed indoors, as close as possible to the point where the cables enter the building.

The lightning protector can also be installed outdoors, as long as the cables that go from the lightning protector to the indoors are well protected from lightning between the box and the building entrance.

Verify that you have shared grounding. GoNet Systems offers a lightning protector that can be ordered separately.

Information de sécurité pour MBW 3100

Exposition aux fréquences RF

Le point d'accès extérieur MBW 3100 est compatible avec la norme CFR 47 section 1.1307 concernant l'exposition aux appareils émetteurs de fréquences radio RF définis par le Bulletin 65 de l'OET. Les antennes doivent être installées à une distance minimum d'un mètre de personnes humaines.

Paratonnerre pour MBW 3100

Un paratonnerre est nécessaire lorsque le point d'accès MBW 3100 est installe à l'extérieur et lié à un network intérieur par un câble Ethernet.

La fonction du paratonnerre est de protéger les personnes et équipement situés en intérieur des éclairs qui pourraient frapper le MBW 3100 ou son câble extérieur. Par conséquent, le paratonnerre doit être installé en intérieur le plus près possible du point où le câble de liaison pénètre le bâtiment.

Le paratonnerre peut aussi être installé en extérieur à la condition que les câbles a l'intérieur du bâtiment soient protégés des éclairs entre le point d'accès et l'entrée du bâtiment

Vérifier que la prise de terre est partagée. GoNet Systems met a disposition à la vente un paratonnerre.

Installation Process

Installing the MBW 3100 involves the following steps:

1. Performing a Site Survey
2. Assembling and Mounting
3. Mounting the MBW 3100 unit
4. Connecting the cables
5. Powering up the unit and configuring the software
6. Performing a Post-installation Testing Procedure to verify connectivity and operation

Site Survey

Most wireless LANs include many access points installed in various locations in an overlapping radio-cell pattern. It is important to carefully identify each access point's position and the assignment of its radio channels. Therefore, a site survey becomes an essential first step before physically deploying the MBW 3100.

Installation of the access points requires a backhaul to interface the corporate network or Internet. This backhaul connection can be a mesh configuration, an Ethernet-wired connection, or a third-party solution. When using any method other than a wired connection, keep in mind the MBW 3100 has to have a good reception on its backhaul side so it will not limit the access-channel performance.

Conclude the site survey with a detailed plan of the MBW system deployment. The system deployment plan should include MBW 3100 mounting points and the routes for the power and backhaul cables.

Note: Since the mounting structure itself is a potential source of interference, the cell should be mounted with at least 4 feet of clearance between the antennas and the mounting structure.

Assembling and Mounting the MBW 3100

The universal mount is used to attach and secure the MBW 3100 to a wall, a streetlight arm, or a variety of poles.

The MBW 3100 mounting consists of the following stages and should be performed in the following order:

1. Connect the MBW 3100 unit to the brackets using the 'L' adaptor.
2. Secure the mounting brackets to a streetlight arm, wall, or pole.
3. Assemble the MBW 3100 unit to the bracket.
4. Ground the MBW 3100 unit.
5. Adjust the MBW 3100 unit.
6. For pole mounting, install the security cable.

Table 2 lists the universal mount parts:

Item No.	Description	Qty	Picture
A	Wall/Pole Bracket	1	
B	Clamping Bracket	1	
C	MBW 3100 'L' Adapter Wall/Pole Mount	1	
D	MBW 3100 'T' Adapter Wall/Pole Mount	1	
E	Hex Bolt M8x70	2	
F	Hex Bolt M8x40	1	
G	Hex Bolt M8x25	1	

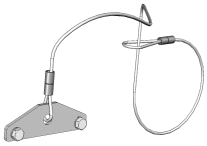
Item No.	Description	Qty	Picture
H	Flat Washer M8	3	
I	Spring Washer M8	4	
J	Nut M8	1	
K	Safety Cable	1	

Table 2: Mounting Kit Part List

Hardware and Connectors Installation Tools

The following tools are required to mount the MBW 3100 on a pole.

Description	Picture
Combination Wrench (7 mm)	 7 mm
Combination Wrench (13 mm)	 13 mm

Table 3: Mounting Tools and Equipment

Note: All hardware and tools used for assembling and mounting the MBW 3100 are Metric.

Mounting Adapters

When mounting to a pole, the required mounting adapter is based on the position of the pole. Installation to a horizontal pole requires using the 'L' adapter. Installation to a vertical pole requires using the 'T' adapter.

To assemble the 'L' adaptor [C] to the MBW 3100 unit:

- Attach the 'L' adapter to the MBW 3100 using an M8x25 hex bolt [G], a spring washer [I], and a flat washer [H], as illustrated in Figure 1.

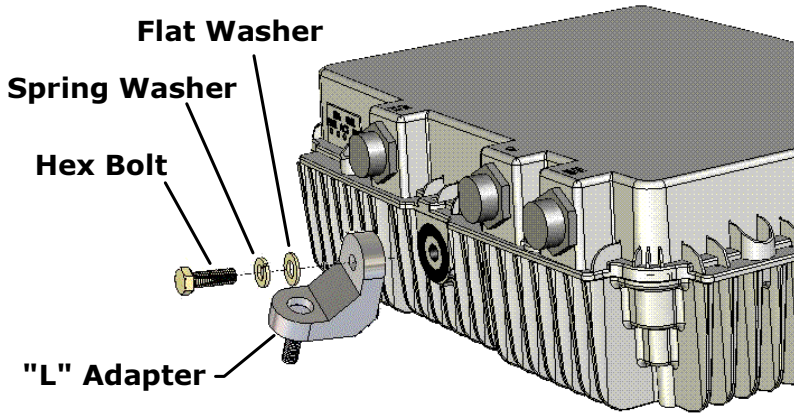


Figure 1: Mount 'L' Assembly

To assemble the 'T' adaptor [D] to the MBW 3100 unit:

- Attach the 'T' adapter to the MBW 3100 using an M8x25 hex bolt [G], a spring washer [I], and a flat washer [H], as illustrated in Figure 1.

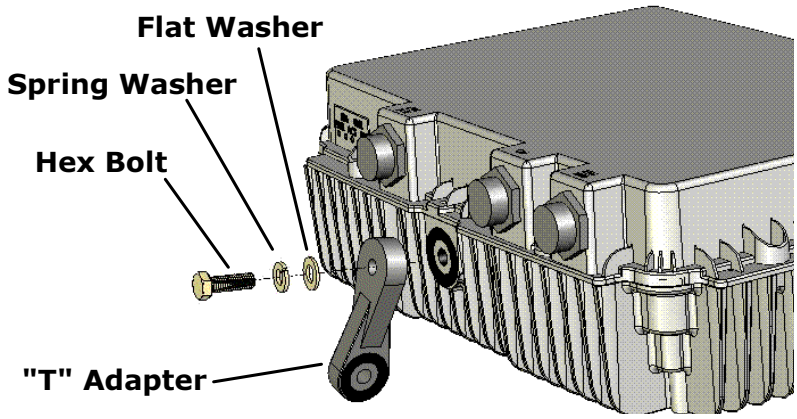


Figure 2: Mount 'T' Assembly

Mounting Brackets

To secure the mounting brackets:

1. Select an optimal mounting location on the pole or wall. Select the highest mounting location with minimal obstacles to the antennas for optimal performance.

NOTE: When mounting the MBW 3100, the pole or wall mounting must support a minimum of 61.6 lbs (28 kg). In addition, the pole or wall mounting must support the wind loads from the MBW 3100. For example, the wind load at a wind velocity of 100 mph (160 km/h) is 24.2 lbs (11 kg) and the wind load at a wind velocity of 165 mph (264 km/h) is 66.1 lbs (30 kg).

Noter: *Lorsque vous montez la MBW 3100, le poteau ou le montage mural doit supporter d'un minimum de 61.6 lbs (28 kg). En outre, le montage sur le poteau ou sur le mur doit appuyer les surcharges dues au vent de la MBW 3100 (par exemple, 24.2 lbs (11 kg) pour la vitesse du vent de 100 mph (160 km/h), 66.1 lbs (30 kg) pour l'énergie éolienne Vitesse de 165 mph (264 km/h)).*

2. Installation of the mounting brackets to a streetlight arm or a pole differs according to the width of the pole, as illustrated in Figure 3.

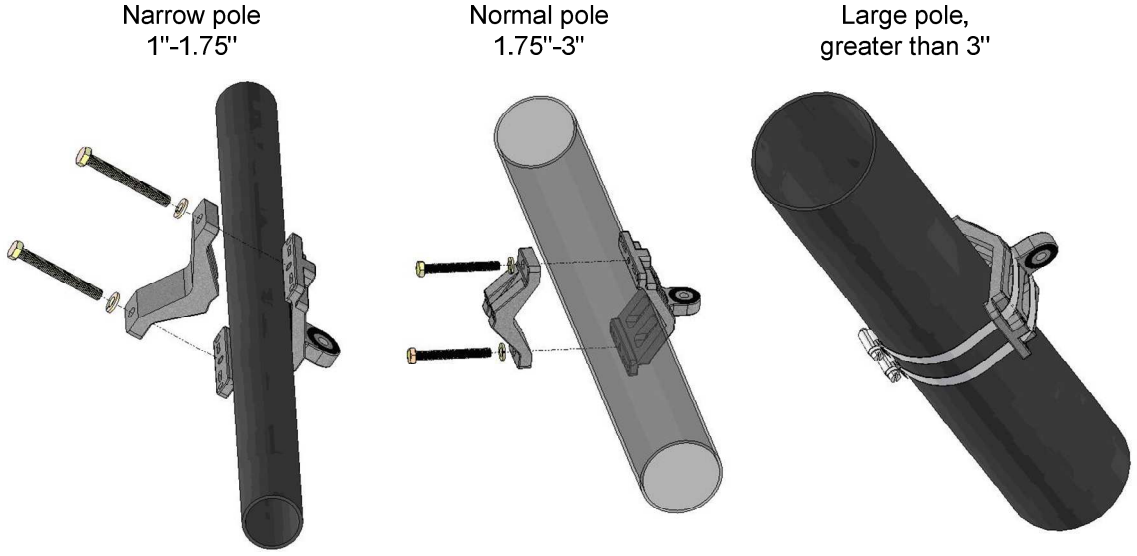


Figure 3: Pole Bracket Assembly

3. For narrow poles (1”–1.75” diameter):
   a) Place the two brackets, [A] and [B], around the pole at the approximate height where you wish to place the unit. When placing the clamping bracket [B], the small notch side should be in contact with the pole.
   b) Use two M8x70 hex bolts [E] and spring washers, insert them through both brackets and tighten them around the pole so that the two brackets are securely fastened.
4. For normal poles (1.75”–3” diameter):
   a) Place the two brackets, [A] and [B], around the pole at the approximate height where you wish to place the unit. When

placing the clamping bracket [B], the large notch side should be in contact with the pole.

b) Use two M8x70 hex bolts [E] and spring washers [I], insert them through both brackets and tighten them around the pole so that the two brackets are securely fastened.

5. For poles larger than 3” in diameter:

   a) The wall/pole bracket [A] and two 9/16" (14mm) wide stainless steel hose clamps (not supplied with mounting kit) are used. The hose clamps must be the appropriate size to fit around the pole and bracket.

   b) Open the each hose clamp by rotating the screw on the clamp counterclockwise. There may be additional resistance just before the clamp is completely open. This is normal and you should continue rotating the screws until the clamps are open.

   c) Insert the band of each clamp through both slots and over the bracket [A].

   d) Place the bracket [A] and hose clamps around the pole at the approximate height where you wish to place the unit.

   e) Close each clamp by reinserting the band under the screw and rotate the screw clockwise.

   f) Position the bracket in the appropriate location and tighten the clamps around the pole so that the bracket is securely fastened.

6. For wall mounting:

   a) Fasten the wall/pole bracket [A] to the wall using four 3/16” (5mm) bolts, as shown in Figure 4. Use the appropriate bolts and fasteners, which is dependent on the material of the wall. Wall-mounting bolts and fasteners are not supplied with the mounting kit.

   b) Place the wall/pole bracket [A] at the appropriate location where you wish to place the unit. Using the four holes at the corners of the bracket, mark the location where the fasteners need to be installed.

   c) Install the four fasteners in the wall.

   d) Insert the four bolts through the bracket and securely fasten the bracket to the wall.

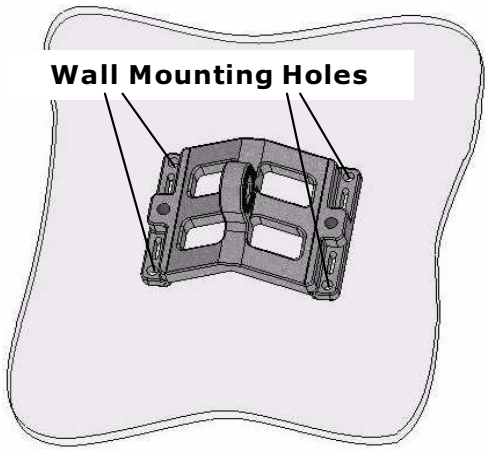


Figure 4: Bracket Wall Mounting

Mounting the MBW 3100

When mounting to a pole, the required mounting adapter is based on the position of the pole. Installation to a horizontal pole requires using the 'L' adapter. Installation to a vertical pole requires using the 'T' adapter.

To mount the MBW 3100 unit to a horizontal pole:

1. After assembling the brackets, mount the MBW 3100 unit on to the bracket as shown in Figure 5. Use a flat washer [H], a spring washer [I] and a nut [J].

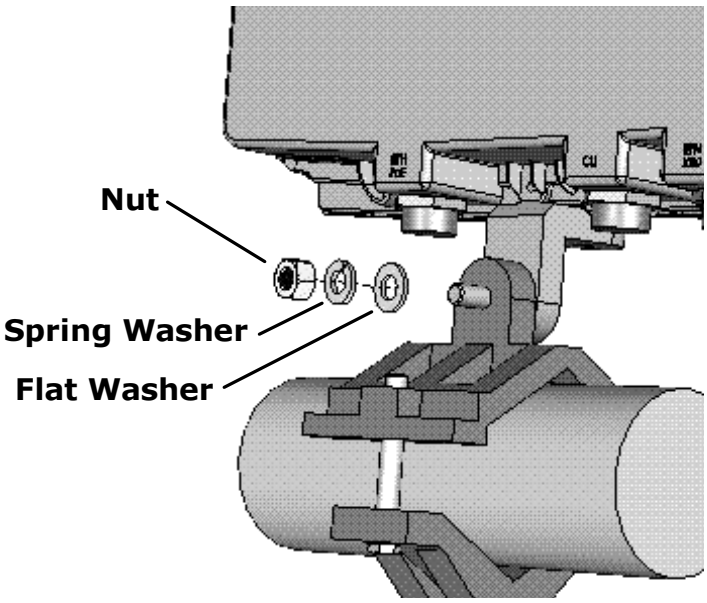


Figure 5: MBW 3100 Unit Horizontal Pole Mounting

2. Once the MBW 3100 unit is mounted, release the bolts slightly and adjust the MBW 3100 unit to enhance the coverage and bypass interference. When the unit is adjusted, firmly close all bolts, applying 120 inch-lbs of torque.

To mount the MBW 3100 unit to a vertical pole:

1. After assembling the brackets, mount the MBW 3100 unit on to the bracket as shown in Figure 5. Use a bolt [F], flat washer [H], spring washer [I] and nut [J].

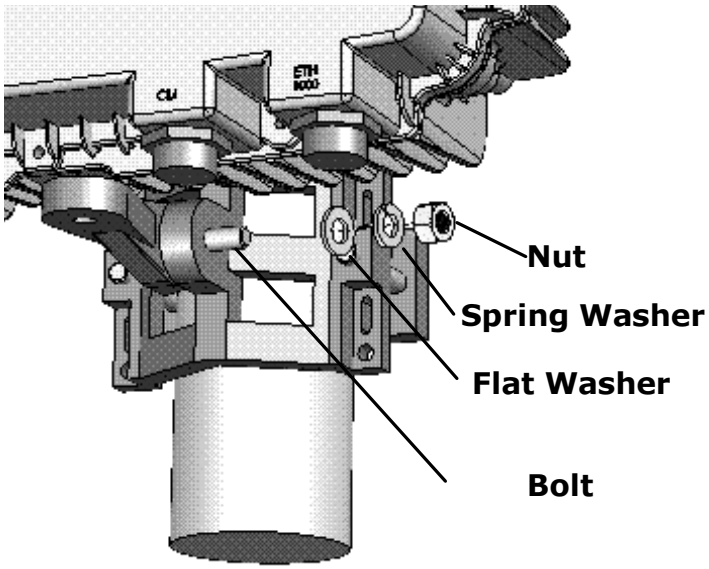


Figure 6: MBW 3100 Unit Vertical Pole Mounting

2. Once the MBW 3100 unit is mounted, release the bolts slightly and adjust the MBW 3100 unit to enhance the coverage and bypass interference. When the unit is adjusted, firmly close all bolts, applying 120 inch-lbs of torque.

Installing the Safety Cable

Once the MBW 3100 unit is mounted, install the safety cable.

1. Wrap the safety cable around the pole and insert the mounting plate through the cable loop.
2. Attach the mounting plate to the MBW 3100 unit using the M4 captive bolts, as shown in Figure 4.

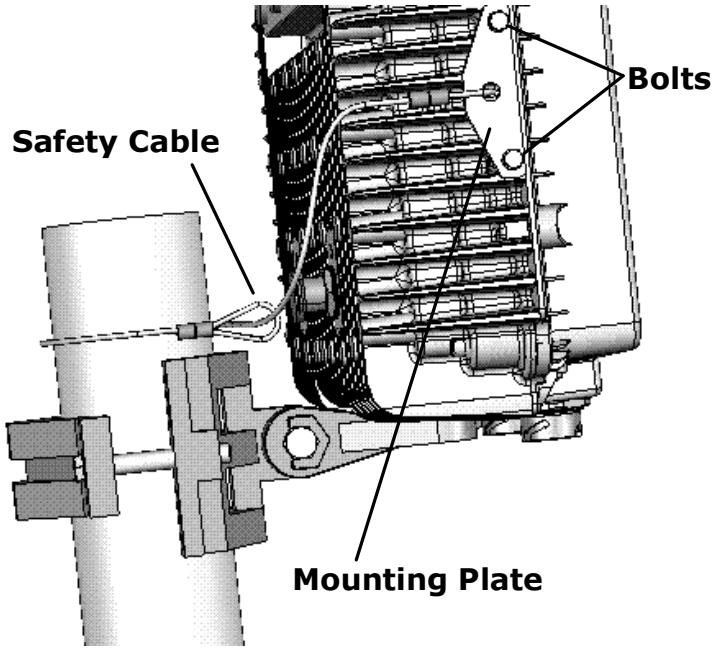


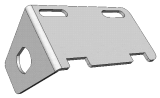
Figure 7: Safety Cable Installation

Assembling and Mounting the Optional Mesh Antenna

The mounting bracket is used to attach and secure the mesh antenna to a variety of poles. The antenna mounting consists of the following stages and should be performed in the following order:

1. Connect the antenna wire to the bracket.
2. Secure the mounting brackets to a pole.
3. Assemble the antenna to the bracket.
4. Attach the antenna wire to the MBW 3100 unit.

Table 2 lists the parts included in the optional mesh antenna kit:

Item No.	Description	Qty	Picture
A	Antenna	1	
B	Mounting Bracket	1	

Item No.	Description	Qty	Picture
C	Stainless Steel Hose Clamp 9/16” (14mm) width	2	
D	Antenna Wire	1	

Table 4: Mesh Antenna Kit Part List

Installation Tools

The following tools are required to mount the mesh antenna on a pole.

Description	Picture
Combination Wrench (18 mm)	 18 mm

Table 5: Antenna Mounting Tools

1. Select an optimal mounting location on the pole. Select the highest mounting location with minimal obstacles to the antennas for optimal performance.
2. Attach the antenna wire [D] to the mounting bracket [B], as illustrated in Figure 8.
   a) Remove the nut and lock washer from the antenna connector.
   b) Insert the connector through the hole in the bracket.
   c) Reassemble the lock washer and nut to the connector.
   d) Tighten the nut to 45 inch-lbs of torque.

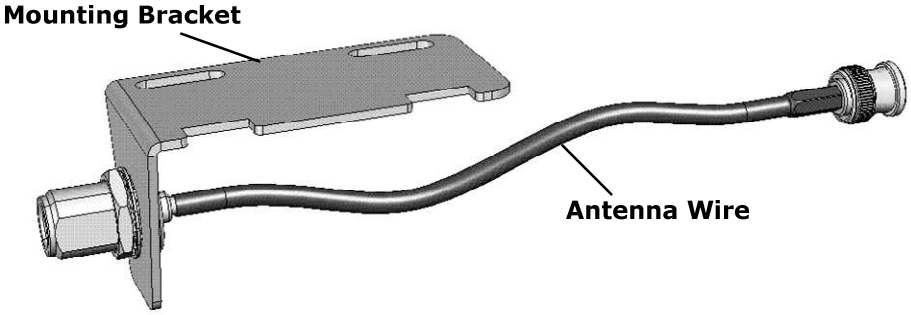


Figure 8: Mounting Bracket Assembly

3. Attach the bracket to the pole. For poles 3” diameter or less use the supplied hose clamps [C]. For larger poles use appropriate hose clamps (not supplied with mounting kit). See Figure 9.
   a) Open each hose clamp [C] by rotating the screw on the clamp counterclockwise. There may be additional resistance just before the clamp is completely open. This is normal and you should continue rotating the screws until the clamps are open.
   b) Insert the band of each clamp through both slots and over the bracket [B].
   c) Place the bracket [B] and hose clamps [C] around the pole at the approximate height where you wish to place the unit.
   d) Close each clamp by reinserting the band under the screw and rotate the screw clockwise.
   e) Position the bracket in the appropriate location and tighten the clamps around the pole so that the bracket is securely fastened.

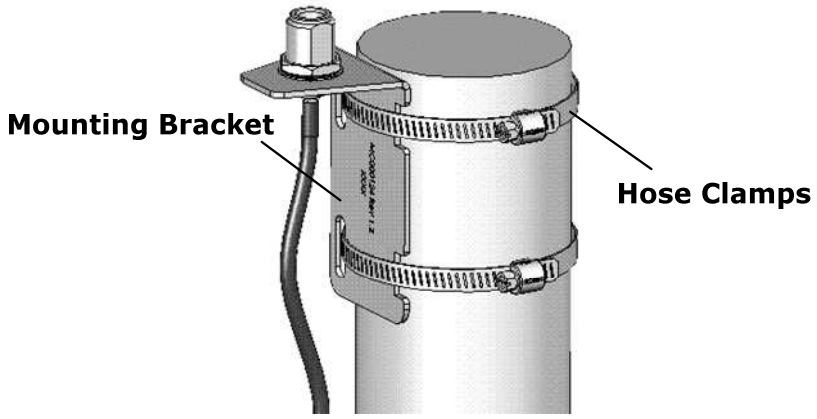


Figure 9: Mounting Bracket to Pole

4. Attach the meshing antenna to the connector by screwing the antenna into place by hand. Rotate the antenna at its metallic base. The antenna should rotate easily. Tighten the antenna by hand only. Do not apply excessive force by using any tool, as this may damage the antenna and connector.

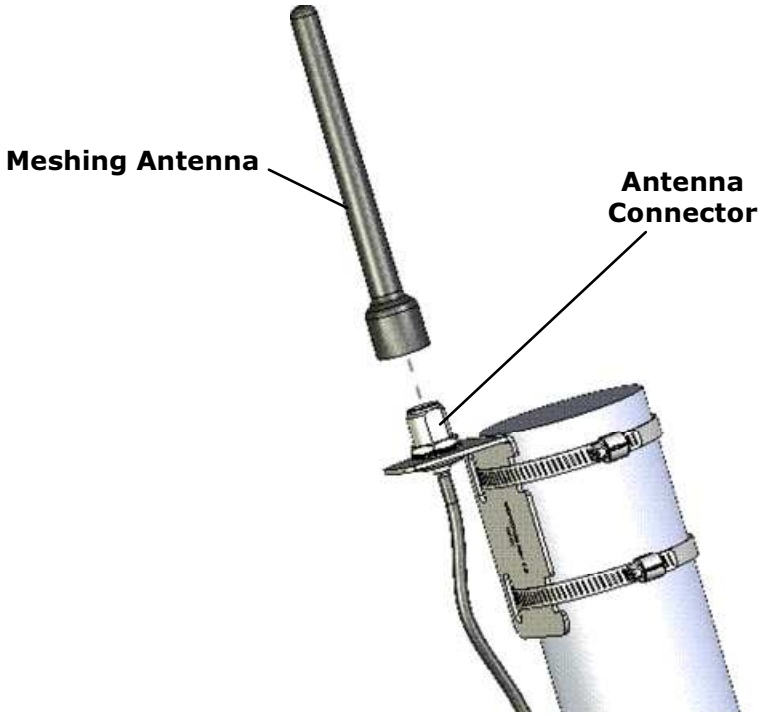


Figure 10: Mounting Bracket to Pole

3. Attach the other connector on the antenna wire [D] to terminal B2 on the MBW 3100 unit. Tighten the connector by hand. Do not apply excessive force by using any tool, as this may damage the unit.

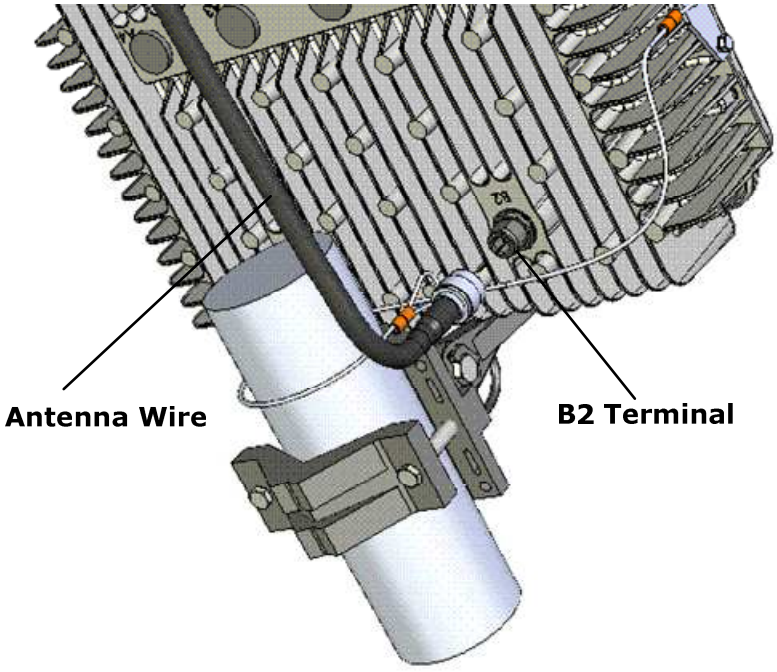


Figure 11: Antenna Wire

Cable Connections

When the MBW 3100 is properly adjusted, the connecters are located at the bottom of the unit.

Cable requirements are often unique to the location and deployment topology of each installation. As a result of this limitation, the Ethernet and grounding cables are not included in the installation kit.

The following cables are required to install the MBW 3100 unit and should be connected in the following order:

- **Grounding Cable –** Provides the necessary electrical safety functions.
- **Power over Ethernet (PoE) Cable –** Supplies 48 VDC power to the MBW 3100 unit and an Ethernet connection to a wired network.
- **RS-232/RJ45 Console Cable –** Provides a connection from the MBW 3100 unit to a console (laptop computer) for configuration. This is only required when the MBW 3100 unit is not pre-configured. This cable is not provided with the MBW 3100 unit. It is recommended that the MBW 3100 is pre-configured prior to installation.

Table 6 lists the MBW 3100 Connectors Kit parts:

Item No.	Description	Qty	Picture
A	Solderless Ring Terminal	1	
B	Ground Screw	1	
C	Lock Washer	2	
D	Sealed RJ45 connector	2	

Table 6: Connectors Kit Part List

Cable Installation Tools

The following special tools are required to install and connect cables related to the MBW 3100.

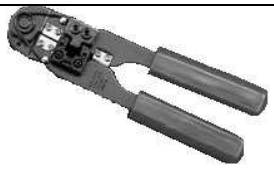
Description	Picture
#2 Phillips Screwdriver	
RJ45 Crimp Tool	 HT-210A

Table 7: Cable Installation Tools and Equipment

Grounding Cable

Connect a grounding wire to the grounding screw at the side of the MBW 3100 unit, near the grounding icon. A 10 AWG grounding cable is required to ground the MBW 3100 unit.

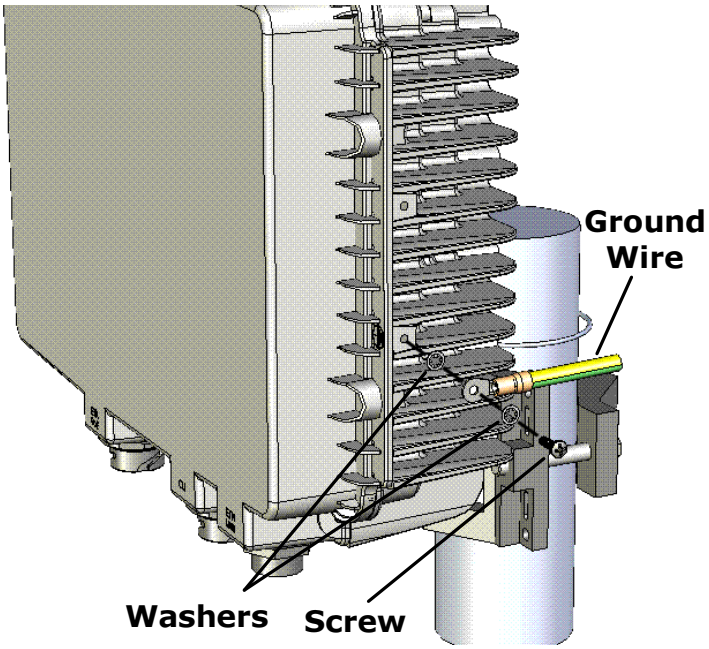


Figure 12: Grounding Connection

To ground the MBW 3100 unit:

1. Crimp the solderless ring terminal [A] contained in the MBW 3100 Connectors Kit to the grounding cable.

2. Attach the solderless ring terminal [A] to the side of the MBW 3100 unit using the grounding screw [B] and lock washers [C].
3. Connect the other end of the grounding cable to a proper ground.

Note: Connect the 10 AWG grounding cable before connecting any other cables. When removing the MBW 3100, the grounding cable should be the last cable removed.

Noter: *Connecter la prise de terre 10 AWG avant de connecter tout autre câble. Pendant la désinstallation du MBW 3100, la prise de terre doit être le dernier câble retiré.*

Power over Ethernet (PoE) Connection

The Power over Ethernet (PoE) connection supplies the MBW 3100 unit with power and includes an Ethernet connection. This connection is used for wired backhaul connection or an interface to a third party wireless BH solution. Use outdoor rated CAT5 shielded cables or better. The outer diameter of the Ethernet cable must be 4.8 – 7 mm.

When using CAT5 shielded 24 AWG cables, the cable can be up to 60 meters. When using CAT5 shielded 22 AWG cables, the cable can be up to 100 meters.

The following diagram illustrates how the PoE cable should be assembled prior to connecting it to the MBW 3100 unit:

Figure 13: Ethernet Cable Connector

The pinouts for the PoE connector are as follows:

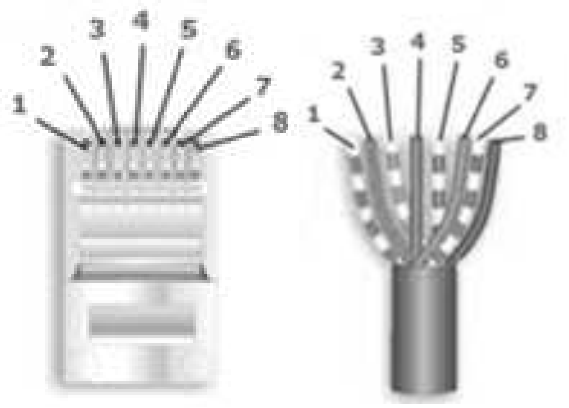


Figure 14: Ethernet Cable Connector

Pin #	Signal
1	Data
2	Data
3	Data
4	+48V
5	+48V
6	Data
7	-48V
8	-48V

Table 8: PoE Ethernet Connector Pinout

Note: Connect the grounding cable before connecting any other cables. When removing the MBW 3100, the grounding cable should be the last cable removed.

Noter: *Connecter la prise de terre 10 AWG avant de connecter tout autre câble. Pendant la désinstallation du MBW 3100, la prise de terre doit être le dernier câble retiré.*

The PoE wiring method requires a power injector. The following diagram illustrates the wiring from the power injector to the WBM 3100 unit.

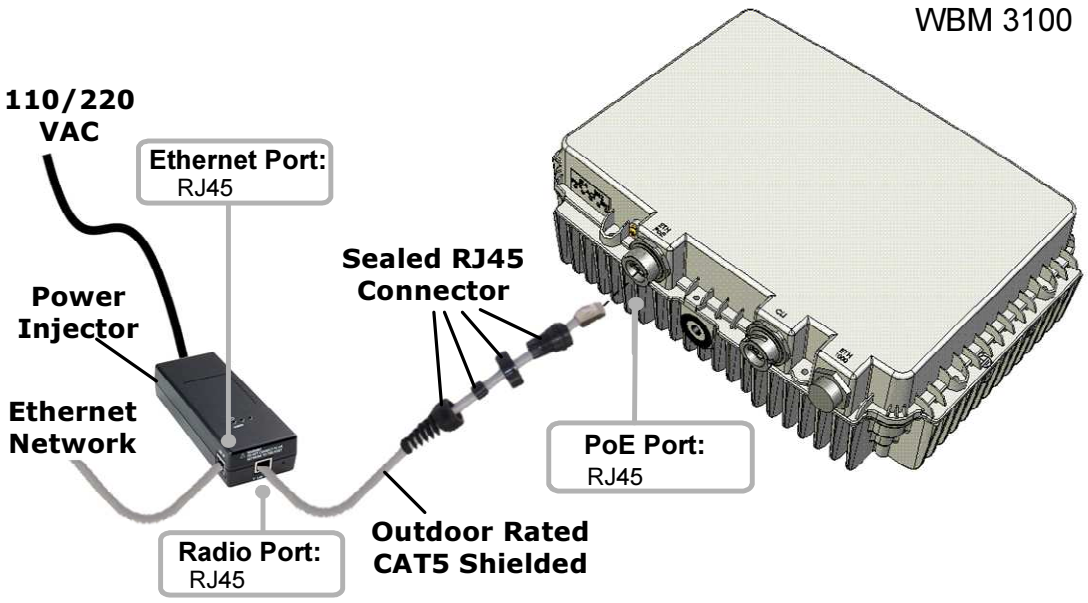


Figure 15: PoE Wiring Connections

To wire the PoE connection:

1. Build the PoE cable as described above.
2. Using the PoE cable, connect the RJ45 connector to the PoE port on the MBW 3100. Then assemble and tighten the sealed RJ45 connector to the MBW 3100 unit.
3. Connect the other end of the PoE cable to the Radio port on the power injector.
4. Connect the Ethernet cable from the Ethernet network to the Ethernet port on the power injector.
5. Connect the AC power to the power injector.

Computer Connection

Figure 16 illustrates the Ethernet cable connections used to connect the MBW 3100 to a notebook computer. This connection is typically used for the initial configuration. For more information regarding the configuration, see the *GoNet MBW Configuration Guide*. For more information regarding the RS232 on RJ45 cable, see *Appendix B: Wiring Specifications.*

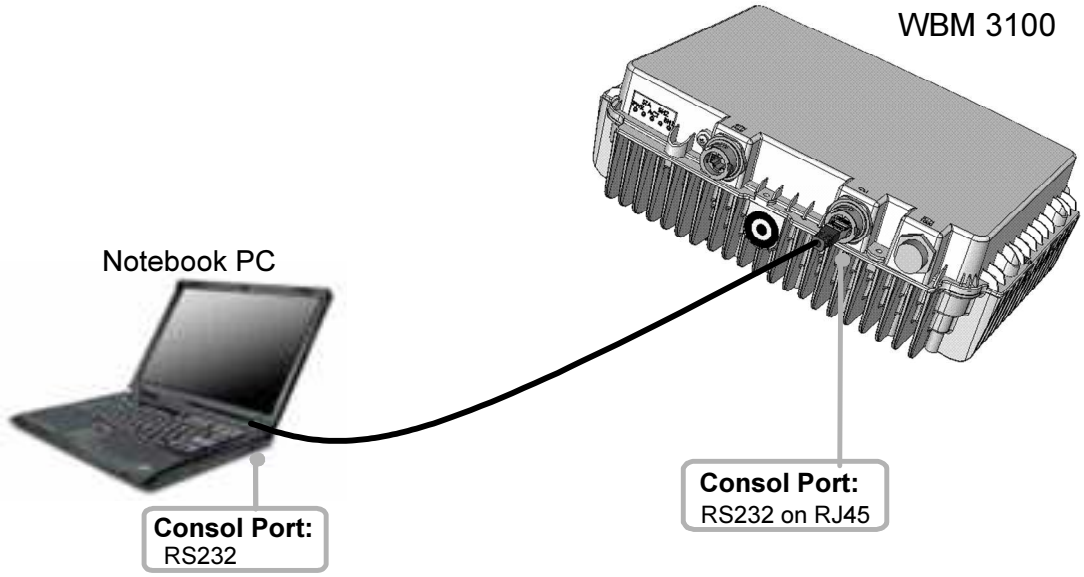


Figure 16: Connect and Access the MBW 3100

Note: New laptops may not include an RS-232 serial port. If a serial port is not available, you may use a USB to serial converter.

Power Up and Software Configuration

The MBW 3100 unit is normally mounted on a streetlight (pole or wall) where it is inconvenient to configure. Therefore, it is recommended that wireless communication be established to the unit prior to installation, so that the unit can later be configured and monitored from the ground. To verify communications when installing the MBW 3100 unit, the Mesh-Gateways must be installed and powered up first.

The LEDs on the MBW 3100 unit indicate the status of communications between the MBW 3100 unit and the network. See Table 9 for more information on the LED indicators.

The ACT LED on the Mesh-Gateway should be checked to verify that wired communications have been established. The BH1 LED on the Mesh-Gateway should be checked to verify that wireless communications have been established.

When powering up a Mesh-Node, the BH1 LED should be lit to verify that the MBW 3100 unit's wireless communication is connected. MBW 3100 boot time is about 2.5 minutes. The BH1 LED indicator will light up after the boot is completed.

LED	Function
PWR	**Green** – There is power to the unit. **Unlit** – There is no power to the unit.
STA	**Green** – The operational status of the MBW 3100 unit is normal. **Red –** The MBW 3100 unit is in a failure state. **Unlit** – There is no power to the unit.
ACT	**Green** – When the LED is on, there is a communication connection. When the LED is flashing, traffic is flowing though the MBW 3100 unit. **Unlit** – There is no communication connection.
BH1	**Green** – On a Mesh-Gateway, the mesh functionality is activated. On a Mesh-Node, the MBW 3100 is connected to the mesh. **Unlit** – On a Mesh-Gateway, the mesh functionality is not activated or no Ethernet link is available. On a Mesh-Node, the MBW 3100 is not configured or failed to connect to the mesh.

Table 9: MBW 3100 LED Indicators

Appendix A: List of Acronyms

Acronym	Explanation
802.11	A family of specifications related to wireless networking, including: 802.11a, 802.11b, and 802.11g.
AP	Access Point. The hub of a wireless network. Wireless clients connect to the access point, and traffic between two clients must travel through the access point. Access points are often abbreviated to AP
BSSID	Broadcast Service Set Identifier
DHCP	Dynamic Host Configuration Protocol. A protocol which enables a server to automatically assign an IP address to clients so that the clients do not have to configure the IP addresses manually.
EAP	Extensible Authentication Protocol. A standard form of generic messaging used in 802.1X.
ESSID	EGOed Service Set Identifier
PMK	Pairwise Master Key
SSID	Service Set Identifier, a set of characters that give a unique name to a WLAN.
TKIP	Temporal Key Integrity Protocol
VLAN	Virtual Local Access Network
WDS	Wireless Distribution System
WEP	Wired Equivalent Privacy. An encryption system created to prevent eavesdropping on wireless network traffic.
WPA	Wi-Fi Protected Access. A modern encryption system created to prevent eavesdropping on wireless network traffic. It is considered more secure than WEP.

Acronym	Explanation
WPA-EAP	WPA-Extensible Authentication Protocol
WPA-PSK	WPA-Pre-shared key

Appendix B: Wiring Specifications

Console Port (DTE)	RJ-45-to-RJ-45 Straight Cable		RJ-45 to DB-9 Terminal Adapter	Console Device
Signal	**RJ-45 Pin**	**RJ-45 Pin**	**DB-9 Pin**	**Signal**
No connection	1	1	8	CTS
No connection	2	2	6	DSR
No connection	3	3	5	GND
GND	4	4	5	GND
RxD	5	5	3	TxD
TxD	6	6	2	RxD
No connection	7	7	4	DTR
No connection	8	8	7	RTS

Table 10: Console Port Signaling and Cabling with a DB-9 Adapter for the MBW 3100 Unit