Tsunami® MP-10100-BSU&SUA / MP-10100L-BSU&SUA
Quick Installation Guide

IMPORTANT!

For regulatory information and latest product updates, including the firmware and the MIBs, please visit Proxim's support site at http://support.proxim.com.

The device must be installed by a trained professional who is familiar with Radio Frequency planning issues and the regulatory limits.

The installation procedure is explained by taking connectorized device as an example. Follow the same procedure for the integrated antenna device as well.

Introduction

Proxim's Tsunami® MP-10000 & 10000L Series leverage the advantages of Orthogonal Frequency Division Multiplexing (OFDM), Multiple-Input and Multiple-Output (MIMO) radio innovations and Proxim's proprietary Wireless Outdoor Router Protocol (WORP®) to provide wireless solutions exceeding 4G speed requirements with up to 867 Mbps data rate. With high capacity and high power radio, the Tsunami® MP-10000 & 10000L Series is an ideal solution for everything from last mile Broadband Wireless Access (BWA) to Wireless Video Surveillance for extended coverage.

Products Covered

Model	Description
MP-10100-BSU	Outdoor Tsunami® Base Station with 2 N-Type connectors, 867 Mbps data rate and 2x2 MIMO radio operating in 4.900 to 5.925 GHz frequency band.
MP-10100-SUA	Outdoor Tsunami® Subscriber Unit with 2 N-Type connectors, 867 Mbps data rate and 2x2 MIMO radio operating in 4.900 to 5.925 GHz frequency band.
MP-10100L-BSU	Outdoor Tsunami® Base Station Lite with 2 N-Type connectors, 400 Mbps data rate and 2x2 MIMO radio operating in 4.900 to 5.925 GHz frequency band.
MP-10100L-SUA	Outdoor Tsunami® Subscriber Unit Lite with 2 N-Type connectors, 400 Mbps data rate and 2x2 MIMO radio operating in 4.900 to 5.925 GHz frequency band.

Package Contents

Each shipment includes the items listed in the following table. Please verify that you have received all the parts in the shipment, prior to the installation.

What's in the Kit	Image
MP-10100-BSU / MP-10100-SUA / MP-10100L-BSU / MP-10100L-SUA	
Power Injector with Country specific Power Cord *WD - US and EU power cords* *US - US power cord*	
RJ11 Beeper Dongle	
Grounding Kit	
Connector Weather Proofing Kit (2 sets)	
Mounting Kit and Hardware	

What's in the Kit	Image
RSSI Light Pipe Comes with MP-10100(L)-BSU devices only	
Quick Installation Guide	

Device Overview

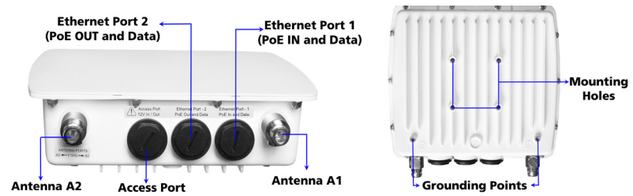


Figure 1: MP-10100-BSU/SUA or MP-10100L-BSU/SUA

The features of the device are as follows:

Features	Description
Ethernet Port 1	• PoE IN and Data • Debugging and Management
Ethernet Port 2	• Manageable PoE OUT and Data (Default Data only)
Access Port	• Antenna Alignment • 12 V DC Power IN/OUT
Antenna Ports (A1, A2) in case of connectorized device	• A provision to connect external antennas
Grounding Points	• A provision to ground the device

Weatherproofing RJ45 Connections

The following steps explain how to weatherproof the RJ45 connections:

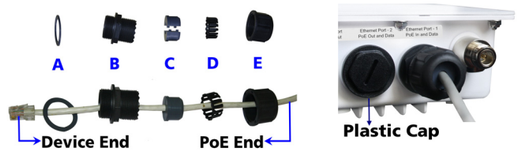


Figure 2: Weatherproofing RJ45 Connections

1. Use an outdoor rated CAT5e cable with a straight-through terminated on both ends.
2. Slide the Flat Washer (A) onto the Connector Body (B) and screw the Connector Body (B) into the Ethernet port hole and torque to 10 Lbf-in (12 Kgf-cm).
3. Next slide the Sealing Nut (E) and then the Compression Ring (D) over the cable end.
4. Place and press the two piece Compression Washer Assembly (C) onto the cable in front of the Compression Ring (D) and Sealing Nut (E), then slide the Compression Ring (D) over the Compression Washer (C). Do not tighten the Sealing Nut (E) to the Connector Body (B).
5. Connect the CAT5e cable by pushing the RJ45 connector through the Connector Body (B) and into the Radio Ethernet port. The RJ45 connector should lock into the port.
6. Next slide the Sealing Nut (E) over the Compression Washer Assembly (C) and slide the Compression Washer Assembly (C) until the Sealing Nut (E) can be screwed it onto on the fixed end of the Connector Body (B). Torque the connection to 15 Lbf-in (17 Kgf-cm) making sure the Compression Washer (C) is tight to the cable and Connector Body (B) completely sealing the cable.
7. Finally, ensure the plastic caps are tight on the secondary Ethernet Port 2 and Access Port and torqued to 9 Lbf-in (10 Kgf-cm), if those ports are unused.

Additional Weatherproofing Steps

To add an additional layer of protection to the connectors against the environment, do the following:

1. Wrap vinyl tape in a half-lapped fashion, from the weatherproof connector end and continue wrapping down 3 inches onto the CAT5e cable.
2. Wrap a second layer of vinyl tape in the reverse direction over the first layer of tape.
3. Now, wrap a third layer of vinyl tape over the other two layers but with the adhesive side up as this provides a sticky surface for the next layer.
4. Next, wrap a layer of the butyl mastic tape over the adhesive side of the tape, covering all of the tape and connector.
5. Wrap vinyl tape over the butyl layer and cover the entire tape assembly.
6. Place a small zip tie over the last wrap of tape to prevent it from unwrapping over time.

For a detailed explanation of weatherproofing RJ45 connectors and RF connections, refer to *Tsunami® MP-10000 & 10000L Series Hardware Installation Guide* and *Tsunami® MP-10000 & 10000L Series Antenna Installation Guide* respectively, at http://support.proxim.com.

Assemble the Mounting Hardware

1. Fix the Mounting Plate (A) onto the bottom of the device using the provided screws and washers such that the antennas will be vertically and horizontally polarized when mounted; also, it is recommended to partially fasten the screws with washers into all the mounting holes, prior to final tightening of each screw. Torque the screws to 75 Lbf-in (86 Kgf-cm).
2. Fix the Extension Arm (B) to the fixed Mounting Plate (A) with the provided screw, nut, and washers. The Extension Arm (B) gives the device more possible tilt, letting you adjust for azimuth or elevation over a larger angle.
3. Fix the Mounting Bracket (C) to the fixed Extension Arm (B) with the provided screw, nut, and washers. Partially tighten the joints J1 and J2 to allow for alignment of the device.
4. Once satisfied with the alignment, tighten the assembled parts by applying torque 130 Lbf-in (150 Kgf-cm).
5. The last image in Figure 3 shows the fully assembled mounting hardware attached to the device.

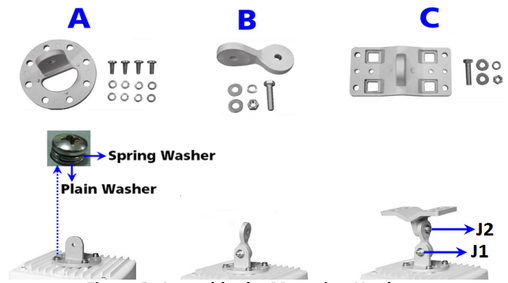


Figure 3: Assemble the Mounting Hardware

Note: This figure is for illustration only. Device should be mounted in square position with connectors facing downward.

Mount the Device

1. To pole-mount the device, insert the provided bolts through Bracket (F), mate with Bracket (C) around the pole, and secure with supplied nuts and washers torquing to 100 Lbf-in (115 Kgf-cm). The supplied screws (hex. Cap 5/16" x 80 mm long) are designed for pole diameters from 38 to 76 mm (1.5 to 3 inches).

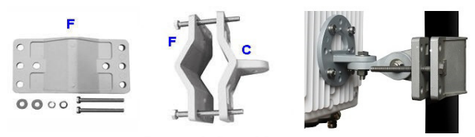


Figure 4: Pole Mounting

2. To wall-mount the device, mount the bracket to a wall using 4 screws (not provided).

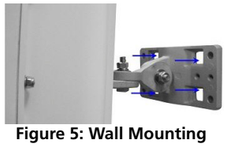


Figure 5: Wall Mounting

Plug in the Cables

Note: Unscrew the sealing cap port cover for installation of cables.

1. Plug one end of the straight-through Cat5e cable into the Ethernet Port 1 of the device by following the Weatherproofing steps explained under section Weatherproofing RJ45 Connections. Connect the other end of the cable into the **Data & Power Out / POE / OUT** port on the PoE Injector.
2. Plugging in the second Cat5e cable to the Ethernet Port 2 is optional.

Notes:

- ***56 V DC (25 W maximum) is available on the Ethernet Port 2; hence, ensure that connected device is rated to use the above voltage and maximum power.***
- ***When PoE IN receives 56 V DC, PoE OUT delivers the same voltage, i.e., 56 V DC.***
- ***By default, the Ethernet Port 2 is for Data only; however, it is possible to enable the PoE OUT and Data feature through Web configuration. Please make sure to disconnect the Ethernet Port 2 cable from the PC before enabling this feature.***

3. Optionally, connect an RJ11 Beeper Dongle to Access Port for audible antenna alignment.
4. To connect the device through a hub or a switch to a Personal Computer, connect an Ethernet cable between the network interface card in the Personal Computer and the hub, and between the hub and the RJ45 **Data In / LAN / IN** port on the PoE Injector.
5. To connect the device directly to a Personal Computer, connect an Ethernet cable between the network interface card in the Personal Computer and the RJ45 **Data In / LAN / IN** port on the PoE Injector.
6. The PoE Power injector is a Gigabit Ethernet port and can supply up to 60 Watts.

Connect the Antenna

Connect the external antenna to the device by connecting the straight N-male end of the cable to the device antenna port and the right angle N-male end of the cable to the antenna.

Notes:

- ***Record the port associated with each antenna port to ensure both sides of the link match and aid radio configuration.***
- ***Use antenna port A1 single polarization antennas, and antenna ports A1 and A2 for dual polarization antennas.***

Install Surge Protector

Tsunami® MP-10000 & 10000L Series comes with a built-in Ethernet surge protection; however, it is mandatory to install an approved lightning surge protector at the building ingress point. Moreover, if you are installing the device in a region subjected to violent thunderstorm or severe weather conditions, then installation of an additional approved lightning surge protector near the device is recommended.

Note: To buy an additional Surge Protector (Part Number: 235-00001), place an order separately with your distributor.

Perform the following steps to ensure proper surge protection:

1. Mount a surge protector near the building ingress and use 10 AWG or larger wire to connect the surge protector's ground lug to earth ground.
2. The outdoor device and co-located surge protector should have a common grounding point using the shortest possible grounding cable.

Note: Use Outdoor-rated, UV protected, shielded Cat5e cable for the following.

3. Connect an RJ45 terminated cable between the indoor equipment and to the port on the surge protector at the building ingress.
4. Connect an RJ45 terminated cable between the surge protector and the outdoor device on Ethernet Port 1.

IMPORTANT: Ensure to loop the cable before entering the premise to prevent water ingress.

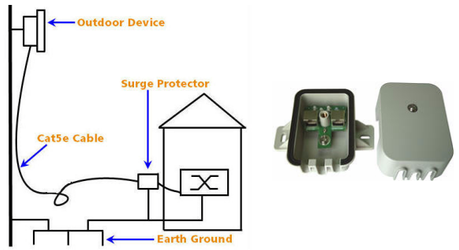


Figure 6: Surge Protector

Ground the Device

To ensure proper grounding, attach a ground wire of at least 12 AWG stranded to the device at either of the ground points which are located at the bottom corners of the device and use the grounding screw provided. It is important to follow the grounding guidelines below to protect the device against lighting or ESD events:

1. Connect one end of the grounding cable to the device and the other end to the closest earth ground point at the installation site.
2. Remove any extra ground wire length when finished connecting it to the single point earth ground.
3. Avoid sharp bends, loops or coiling the ground wire, always connect it straight to ground.
4. A proper earth ground impedance is less than 1.0 ohm.
5. Measure ground impedance at the point where the surge protector ground wire is connected and not at the grounding rod.
6. Connect the surge protector ground wire and equipment ground (both power ground and telecomm ground) to a single common ground.
7. Make sure all connections are fastened securely and tight.
8. Never install a link during a storm and always follow your local safety codes.

Figure 7: Grounding the Device

Power on the Device

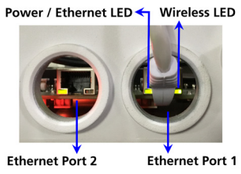
After connecting the PoE Injector and the device using straight-through Cat5e cable plug the power cord into a power outlet. There is no ON/OFF switch on the device. To power down the unit, unplug the RJ45 connector from the **Data & Power Out / POE / OUT** port on the PoE injector.

Port LED Indicators

When the device is powered on, it performs startup diagnostics. When startup is complete, the LEDs show the device's operational state. The LEDs are located on the Ethernet port inside the device enclosure.

Note: The LEDs will not be visible when the weather-sealing caps are installed.

The LEDs can be seen at the bottom of each Ethernet port. The following table describes the status of LEDs:



LED State	Power/Ethernet LED*	Wireless LED
Ethernet Port 1		
Off	No Power*	Power Radio is not present or failed to detect
Amber	Application Image is not detected*	Power is ON and the device detects reload signal
Blinking Green	Power is ON, but the Ethernet link is down*	Radio is ON and the wireless link is yet to be established
Solid Green	Power is ON and the Ethernet link is up*	Wireless link has been established

LED State	Power/Ethernet LED*	Wireless LED
Ethernet Port 2		
Off	Application Image is not detected*	Not Applicable
Amber	Not Applicable*	Not Applicable
Blinking Green	Power is ON, but the Ethernet link is down*	Not Applicable
Solid Green	Power is ON and the Ethernet link is up*	Not Applicable
* The Power LED indication will start approximately about 10 seconds after powering up the device.		

Align the Antenna

To assist alignment, the device can use an audible antenna alignment tool that can be activated by plugging in the RJ11 Beeper Dongle (supplied) or by using the CLI command (For CLI commands, refer to *Tsunami® MP-10000 & 10000L Series Hardware Installation Guide,* which is available at http://support.proxim.com). The RSSI Light Pipe (supplied) can also be used to easily view the RSSI LEDs implemented in device's Access Port.

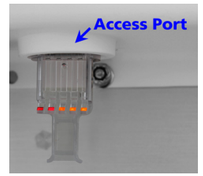


Figure 8: RSSI Light Pipe

Initialize the Device

You can configure the IP address of the device by using HTTP, SNMP, PV Advanced (Proxim's Network Management System), CLI or Proxim's ScanTool. The default IP values used to access the device are shown below:

- **IP address:** 169.254.128.132
- **Subnet Mask**: 255.255.255.0
- **Gateway**: 169.254.128.132
- **Username**: admin
- **Password**: public
- **SNMP Read Write Community String**: public

Download Software & Documentation

To download the Software and Documentation, please visit Proxim's support site at http://support.proxim.com. Once you log on, select the product category **Tsunami® MP-10000 & 10000L Series** from **Product Downloads Page** and links to the latest software, SNMP MIB file and documentation will be available for download from the **Tsunami® MP-10000 & 10000L Series download and documentation page**.

Note: You need Acrobat Reader to view the PDF documents.

Technical Support

- Proxim Customer Support Web site is available 7x24x365 at http://support.proxim.com
- **Telephone Support**:
  - **US and Canada:** +1-408-383-7700; +1-866-674-6626
  - **International:** +1-408-383-7700
  - **Business Hours**: 24x7 live response. Tier 3 support: 8 a.m. to 5 p.m. M-F PDT (UTC/GMT -7 hrs)

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