

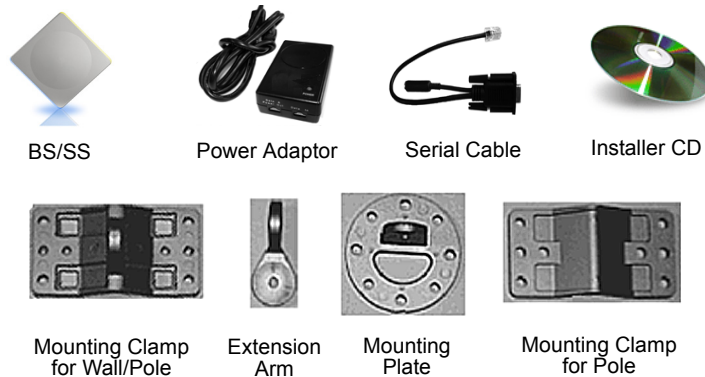
Tsunami MP.16 3650 System Quick Installation Guide

IMPORTANT
This device must be installed by a trained professional, value added reseller or systems integrator who is familiar with RF planning issues and the regulatory limits.

CAUTION!
Heed all the WARNINGS. Follow all the instructions. Do not defeat the safety purpose of the grounding. Only use attachments/accessories specified by the manufacturer.

What is in the Kit

- SS with integrated antenna or BS/SS with external antenna connector (1 ea)
- Power Injector and Cord (1 ea)
- RJ45 to DB9 Serial Connector (1 ea)
- Mounting Hardware Kit (1 ea)
- Cable Termination Kit (1 ea)
- CD with User and Quick Installation Guide (1 ea)



Additional Items Required

- Wrenches, Screwdrivers, and tools as needed for mounting the unit.
- Grounding kits for the coax cable as it enters the shelter, if desired

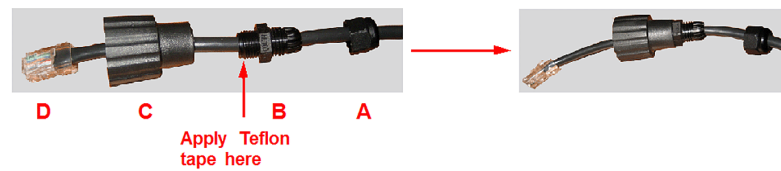
1 Prepare for Installation

Refer to the *Installation and Management Guide* to aid in choosing a proper installation location. Unpack the box and ensure all of the components are in the kit. Note down the serial number as it may be required for support.

2 Assemble the Cable

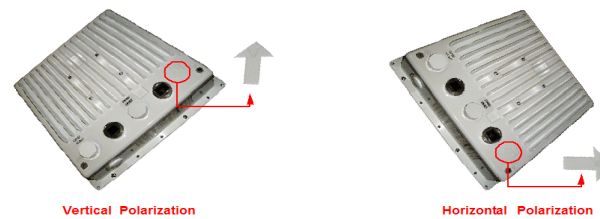
You will be attaching an outdoor-rated 24 AWG CAT5 cable (diameter .114 to .250 inches/2.9 to 6.4 mm) (not provided) to the Power-over-Ethernet port on the back of the unit and weatherproofing the assembly later in the installation procedure. First, you must construct the cable and assemble the weatherproofing cable covers as described in the following steps. Proxim greatly simplifies this assembly process by offering pre-assembled CAT5 cable kits in 25m, 50m, and 75m lengths (part numbers 69819, 69820, and 69821, respectively).

1. Slide the sealing nut (A) over the bare end of the CAT5 cable.
2. Slide the lock nut (B) over the bare end of the CAT5 cable.
3. Slide the sealing cap (C) over the bare end of the CAT5 cable. Make sure the red rubber gasket is inside the cap.
4. Apply two wraps of 0.5" wide Teflon tape around the threads of the lock nut (B) that will go inside the sealing cap.
5. Thread the lock nut (B) onto the sealing cap (C), and hand tighten.
6. Terminate the RJ45 connectors (D) to both ends of the CAT5 cable; test for proper wiring using a straight-through cable.



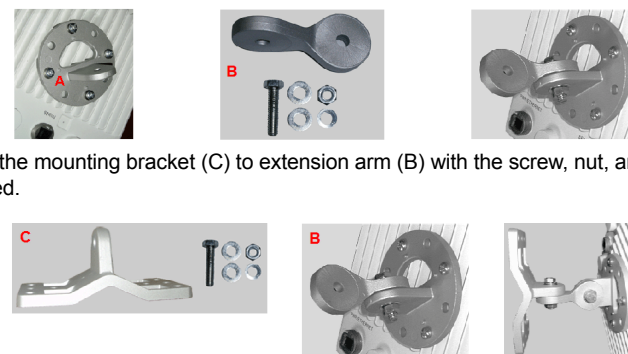
3 Determine Proper Mounting Orientation

Locate the arrow on the back of the unit and determine your desired mounting orientation. For vertical polarization using the integrated antenna, the arrow should be pointing up (perpendicular to the ground). For horizontal polarization using the integrated antenna, the arrow should be horizontal (parallel to the ground).



4 Assemble Mounting Hardware

1. Attach the mounting plate (A) using the provided screws and washers (Torque 9 N-m/75 in-lbs), such that the unit's antenna will be vertically or horizontally polarized when mounted.
2. Attach the extension arm (B) to mounting plate (A) with the screw, nut, and washers provided, as shown below. The extension arm gives the unit more possible tilt, letting you adjust for azimuth or elevation over a larger angle.

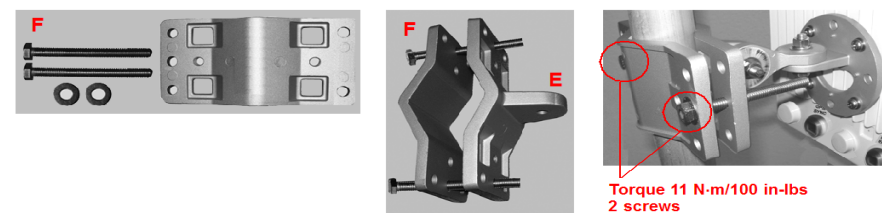


3. Attach the mounting bracket (C) to extension arm (B) with the screw, nut, and washers provided.

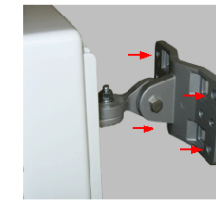
4. Finally tighten the assembly (Torque 15 N-m/130 in-lbs).

5 Mount the Unit

1. To pole-mount, insert screws through bracket F and fasten around the pole to bracket E and secure (Torque 11 N.m/100 in-lbs). Longer bolts (not supplied) are required for mounting the units to a pole with a diameter larger than 3 inches.

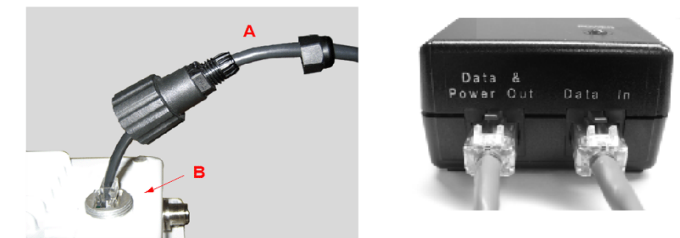


2. To wall-mount the unit, mount bracket E to a wall using 4 screws (not provided), as shown:



6 Plug in the Cables

1. Plug one end of the CAT5 cable (A) into the RJ45 jack of the unit (B).



2. Connect the free end of the CAT5 cable to the "Data and Power Out" port 2. on the power injector.
3. To connect the unit through a hub or a switch to a PC, connect a straight-3. through Ethernet cable between the network interface card in the PC and the hub, and between the hub and the RJ45 "Data In" port on the PoE adapter. To connect the unit directly to a PC, connect a cross-over Ethernet cable between the network interface card in the PC and the RJ45 "Data In" port on the power injector.

7 Power on the Unit

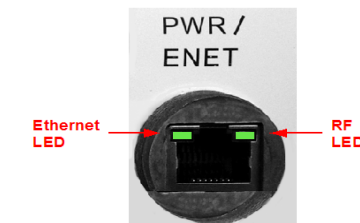
The power adaptor provides Power-over-Ethernet (PoE), supplying electricity and wired connectivity to the unit over a single 24 AWG CAT5 (diameter .114 to .250 inches/2.9 to 6.4 mm). The unit is not 802.3af-compatible. Note that the Active Ethernet module provides +48 VDC over a standard CAT5 Ethernet cable.

Once you have connected the power injector to the Ethernet cabling and plugged the power injector cord into an AC outlet, the unit is powered on. There is no ON/OFF switch on the unit. To remove power, unplug the AC cord from the AC outlet or disconnect the RJ45 connector from the "Data and Power Out" port on the power injector.

Depressing the power adaptor's Reload button for five seconds during power-up remotely resets BS/SS parameters affecting communication between the BS and SS to their factory default settings: IP address, subnet mask, user name, password, Ethernet speed/duplex, and VLAN mode.

8 View LED

Two LED indicators are available on the Ethernet port of the unit. These LEDs display the activity of the Ethernet and RF links.



LED State	Ethernet LED	RF (Wireless) LED	
		Base Station	Subscriber Station
Off	No Ethernet link	Radio is off	Radio is off
On	Ethernet link is connected	Radio is active (transmitting downlink and receiving uplink)	Downlink synchronized.
Flashing	Packets are being received on Ethernet.	Unit is in standby	Increasing on-off speed indicates increasing RSNR.

9 Align the Antenna

Antenna alignment is the process of physically aligning the antenna of the radio receiver and transmitter to have the best possible link established between them. The antenna alignment process is usually performed during installation and after major repairs.

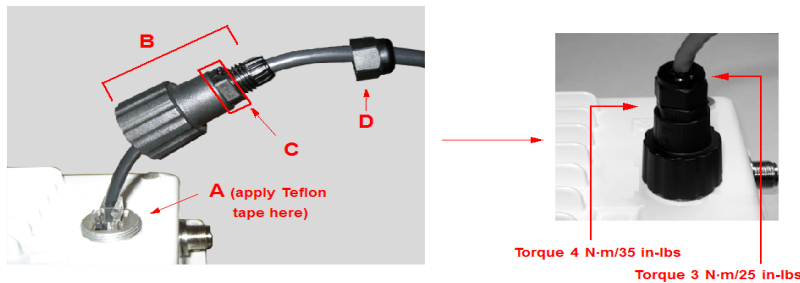
If you are installing external antennas, consult the documentation that accompanies the antenna for installation instructions. Note that you must weatherproof the antenna connectors as described in Weatherproof the Connectors.

To ensure correct antenna alignment:

1. Perform a link budget calculation to obtain an expected signal level. A link budget calculator is available at <http://support.proxim.com>
2. Compare the calculation to the SNR value on the SS by logging into the SS Web interface and clicking **Monitor > Statistics > MAC Statistics**.
3. If needed, physically adjust the antenna, and refresh the **Monitor > Statistics > MAC Statistics** page to take a new SNR reading.

10 Tighten the Cable

1. Apply two wraps of Teflon tape around the threads of the unit's RJ45 jack (A) in a clockwise direction.
2. Make sure that the red rubber gasket is still seated in the sealing cap of the sealing cap/lock nut assembly (B).
3. Slide the sealing cap/lock nut assembly (B) over the RJ45 jack (A) and thread onto enclosure. Hand tighten first, then use a pipe wrench or similar tool to tighten one more quarter turn.
4. Tighten the lock nut (C) (Torque 4 N.m/35 in-lbs).
5. Thread the sealing nut (D) onto the sealing cap/lock nut assembly (B) and tighten (Torque 3 N.m/25 in-lbs).



11 Weatherproof the Connectors

1. Remove the film liner from the rubber-based tape strip.
2. Stretch and wrap the tape around the connector tightly, starting below the connector cap and against the unit and wrapping in a clockwise direction. Wrap the tape once around the base of the connector cap.
3. Seal the tape tightly against the connector and the cable.
4. Apply a layer of black electrical tape (not provided) over the rubber-based tape for further protection. Make sure the electrical tape also extends beyond the rubber-based tape to seal it.

12 Install the Documentation and Software

To install the documentation and software on a computer or network, insert the CD into the CD-ROM drive. The installer starts automatically. If it does not, double click on the **setup.exe** on the installation CD.

The following documentation and software products are installed.

Click **Start > All Programs > Tsunami > MP.16 3650**

- Documentation (in -Docs subdirectory):
 - Installation and Management Guide
 - Quick Installation Guide
 - Safety and Regulatory Guide
 - Recommended Antenna Guide
 - Antenna Installation Guide
 - MP.16 3650 Online Help

All of these items are also available from C:\Program Files\Tsunami\MP.16 3650.

- Available from C:\Program Files\Tsunami\MP.16 3650:
 - Documentation (in **Docs** folder): See list above
 - Help files (in **Help** folder; click on **index.htm** to access)
 - TFTP Server (in **Extras** folder)

Unit Initialization

1. Open a Web browser on a network computer.
2. Enter the unit's IP address in the browser's Address field and press **Enter** or **Go**.

The default IP address of the BS is <https://192.168.10.1>.
The default IP address of the SS is <https://192.168.10.2>.

3. To log in as an administrator, enter **admin** in the User Name field. Enter the password in the Password field. For new units, the default administrator password is **public**.
4. To log in as a user, enter user in the **User** Name field. Enter the password in the Password field. For new units, the default password is **public**.

Proxim strongly recommends that you change these passwords to more secure ones. Refer to the **Tsunami MP.16 3650 System User Guide** for instructions.

5. Click on any of the menu items on the left side of the screen to begin configuring the unit.

Web Interface Navigation

1. **Menu:** Use the collapsible menu on the left of your screen to navigate through the web interface. For headings (marked with a folder icon:) click on the arrow to the left of the heading to expand its contents (). Configuration pages (marked with a page icon:) are used for configuring the unit.
2. **Configuration parameters:** View and change the unit's settings in the "work area." Enter required or desired values in available fields, or use drop down menus to make selections. When you have configured a page, you must click the **OK** button to save your changes. If you do not click the **OK** button, the configuration parameters you specified will not be set.

First Configuration

The MP.16 system operates with little required setup. However, the administrator must initially configure certain parameters to allow the BS and SS to communicate and (if desired) to secure the network.

The following parameters must be set in order for the units to communicate:

- **Center frequency:** On the BS and SS Web interfaces, click **Configuration > Radio** to set the desired frequency.

The following parameters must be set to ensure that the network is secure:

- **IP address:**
 - On the BS Web interface, click **Configuration > Networking > Basic** to set the IP address.
 - On the SS Web interface, click **Configuration > Network** to set the IP address.
- **Passwords:** On the BS Web interface, click **Commands > Passwords** to set HTTPS and CLI passwords.
- **Net Entry mode:** On the BS Web interface, click **Configuration > SS Authentication** to set the Net Entry mode and default SS Class.

More information on these parameters as well as more advanced configuration options can be found in following chapters in the **Tsunami MP.16 3650 System User Guide**:

- "Base Station Configuration" contains information and advanced Web-based configuration options for the BS, including the use of Service Classes.
- "Subscriber Station Configuration" contains information and advanced Web-based configuration options for the SS.
- "Command Line Interface" contains information on configuring the BS/SS via the CLI.

Information for Professional Installers

Adjusting Tx Output Power

Use the following formula in combination with the table of EIRP limits to calculate system transmit power (based on EIRP limits):

$$\text{Tx Power Allowed (dBm)} = \text{EIRP Limit (dBm)} + \text{CL (dB)} - \text{G (dB)}$$

Where:

Tx Power =	Output power measured at the antenna input
EIRP Limit =	EIRP limits specified below
CL =	Coax cable loss including loss of connectors
G =	Antenna Gain

Frequency (GHz)	EIRP Limit (dBm)
3.650 - 3.675	38 @ 7 MHz channels 35 @ 3.5 MHz channels

Antenna Type	Maximum Gain (dBi)
Dipole	8
60 degree sector	17
90 degree sector	14
120 degree sector	17
Flat Panel	18

Certification Summary

Country	Type	Certification/Reference Number
USA	Base Station	HZB-MP163650
USA	Subscriber Station	HZB-MP163650S

Technical Support

Proxim eService Web Site Support

The Proxim eService Web site is available 7x24 at: <http://support.proxim.com>

Telephone Support

Contact technical support via telephone as follows:

- **US and Canada:** 408-383-7700, 866-674-6626 (Toll Free)
Hours of Operation: 8.00AM-6.00PM, Pacific Time, Monday-Friday
- **APAC Countries:** +91 40 23115490
Hours of Operation: 9.00AM-6.00PM, IST (UTC/GMT +5.30 Hrs.), Monday-Friday
- **International:** 408-383-7700
Hours of Operation: 8.00AM-6.00PM, Pacific Time, Monday-Friday

ServPak Support

ServPak is a program of Enhanced Service Options that can be purchased individually or in combinations to meet your needs.

- Advanced Replacement
- Extended Warranty
- 7x24 Technical Support
- Priority Queuing

To learn more, please call Proxim Support at 408-383-7700 or send an email to servpak@proxim.com. To purchase ServPak support services, please contact your authorized Proxim distributor.