Trapeze
Mobility Point™

400 Installation Guide

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For the most current version of this document, see www.trapezenetworks.com.

➡ **Note.** The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

Customer Service

For general information about Trapeze Networks Mobility System™ products and services, visit www.trapezenetworks.com. For warranty, license, and support information, visit the following sites:

● **Warranty and software licenses.** Current Trapeze Networks warranty and software licenses are available at www.trapezenetworks.com/support/warranty.asp.

● **Support services.** For information about Trapeze support services, visit www.trapezenetworks.com/support/. Or call 1-866-877-9822 (in the US or Canada) or +1 925-474-2400 and select option 5.

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Contacting the Technical Assistance Center

Contact the Trapeze Networks Technical Assistance Center (TAC) by telephone, email, or fax. If you have a service contract or are a Trapeze Authorized Partner, log in to www.trapezenetworks.com/support/sup_programs.asp for more help.

● Within the US and Canada, call 1-866-TRPZTAC (1-866-877-9822).

● Within Europe, call +31 35 64 78 193.

● From locations outside the US and Canada, call +1 925-474-2400.

● In non-emergencies, send email to support@trapezenetworks.com.

● When your case is active, you can fax more information to +1 925-474-2423.

TAC Response Time

TAC responds to service requests as follows:

Contact method	Priority	Response time
Telephone	Emergency	One hour
	Non-emergency	Next business day
Email	Non-emergency	Next business day

Information to Have Available

To expedite your service request, have the following information available when you call or write to TAC for technical assistance:

● Your company name and address

● Your name, telephone number, cell phone or pager number, and email address

● Name, model, and serial number of the product(s) requiring service

● Software version and release number

● Output of the **show tech-support** command

● Wireless client information

● License levels for RingMaster™ and Mobility Exchange™ (MX™) products

● Description of the problem and status of the troubleshooting effort

Contents

1

Introducing the Trapeze Networks Mobility System

This guide shows you how to install a Trapeze Networks™ Mobility Point™ (MP™) access point in a Trapeze Networks Mobility System™ wireless LAN (WLAN).

Read this guide if you are a network administrator or other person installing MP access points in a network.

Trapeze Networks Mobility System

The Trapeze Networks Mobility System is an enterprise-class WLAN solution that seamlessly integrates with an existing wired enterprise network. The Trapeze system provides secure connectivity to both wireless and wired users in large environments such as office buildings, hospitals, and university campuses.

The Trapeze Mobility System fulfills the three fundamental requirements of an enterprise WLAN: It eliminates the distinction between wired and wireless networks, allows users to work safely from anywhere (*secure mobility*), and provides a comprehensive suite of intuitive tools for planning and managing the network before and after deployment, greatly easing the operational burden on IT resources.

The Trapeze Networks Mobility System consists of the following components:

● **RingMaster tool suite**—A full-featured graphical user interface (GUI) application used to plan, configure, deploy, and manage a WLAN and its users

● **One or more Mobility Exchange™ (MX™) switches**—Distributed, intelligent machines for managing user connectivity, connecting and powering Mobility Point (MP) access points, and connecting the WLAN to the wired network backbone

● **Multiple Mobility Point™ (MP™) access points**—Wireless access points (APs) that transmit and receive radio frequency (RF) signals to and from wireless users and connect them to an MX switch

● **Mobility System Software™ (MSS™)**—The operating system that runs all MX switches and MP access points in a WLAN, and is accessible through a command-line interface (CLI), the Web View interface, or the RingMaster GUI

Documentation

Consult the following documents to plan, install, configure, and manage a Trapeze Networks Mobility System.

Planning, Configuration, and Deployment

Trapeze RingMaster User's Guide. Instructions for planning, configuring, deploying, and managing the entire WLAN with the RingMaster tool suite. Read this guide to learn how to plan wireless services, how to configure and deploy Trapeze equipment to provide those services, and how to optimize and manage your WLAN.

Trapeze RingMaster Reference Manual. Detailed instructions and information for all RingMaster planning, configuration, and management features.

Installation

- *Trapeze Mobility Exchange Hardware Installation Guide*. Instructions and specifications for installing an MX switch

- *Trapeze Mobility System Software Quick Start Guide*. Instructions for performing basic setup of secure (802.1X) and guest (Web AAA) access, for configuring a Mobility Domain for roaming, and for accessing a sample network plan in RingMaster for advanced configuration and management

- *Trapeze Mobility Point MP-422 Installation Guide* (this document). Instructions and specifications for installing an MP access point and connecting it to an MX switch

- *Trapeze Mobility Point MP-620 Installation Guide*. Instructions and specifications for installing the MP-620 access point and connecting it to an MX switch

- *Trapeze Regulatory Information*. Important safety instructions and compliance information that you must read before installing Trapeze Networks products

Configuration and Management

- *Trapeze RingMaster Reference Manual*. Instructions for planning, configuring, deploying, and managing the entire WLAN with the RingMaster tool suite

- *Trapeze Mobility System Software Configuration Guide*. Instructions for configuring and managing the system through the MSS CLI

- *Trapeze Mobility System Software Command Reference*. Functional and alphabetic reference to all MSS commands supported on MX switches and MP access points

Safety and Advisory Notices

The following kinds of safety and advisory notices appear in this manual. (For translations of the warning conventions and of all warnings in this manual, see *Trapeze Regulatory Information*.)

Caution! This situation or condition can lead to data loss or damage to the product or other property.

Warning! This situation or condition can cause injury.

Warning! High voltage. This situation or condition can cause injury due to electric shock.

Warning! Radiation. This situation or condition can cause injury due to improper handling of fiber-optic equipment.

Note. This information is of special interest.

Text and Syntax Conventions

Trapeze manuals use the following text and syntax conventions:

Convention	Use
Monospace text	Sets off command syntax or sample commands and system responses.
Bold text	Highlights commands that you enter or items you select.
Italic text	Designates command variables that you replace with appropriate values, or highlights publication titles or words requiring special emphasis.
Menu Name > **Command**	Indicates a menu item that you select. For example, **File** > **New** indicates that you select **New** from the File menu.
[ ] (square brackets)	Enclose optional parameters in command syntax.
{ } (curly brackets)	Enclose mandatory parameters in command syntax.
	(vertical bar)	Separates mutually exclusive options in command syntax.

MP Overview

A Trapeze Networks Mobility Point (MP) access point provides IEEE 802.11 wireless access to the network. MP access points are designed for use with a Trapeze Networks Mobility Exchange (MX) switch. MP access points require hardware installation only. All configuration for an MP access point takes place on the MX switch.

This guide describes MP model MP-422. The MP-422 has one 802.11a radio and one 802.11b/g radio. Both radios have internal diversity omnidirectional antennas. In addition, both radios have separate jacks for attachment of optional external sectorized or directional antennas. The antennas must be ordered separately.

⚠️ **Warning!** Installation must be performed by qualified service personnel only. Read and follow all warning notices and instructions marked on the product or included in the documentation. Before installing the product, read the *Trapeze Regulatory Information* document.

➡️ **Note.** The MP radios are disabled by default and can be enabled only by a system administrator using the MX switch.

External Hardware Features

Figure 1 and Figure 2 show the external hardware features of the MP-422.

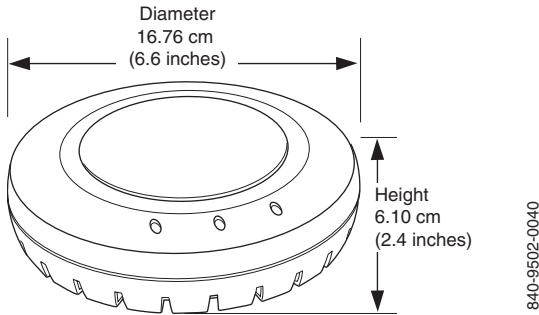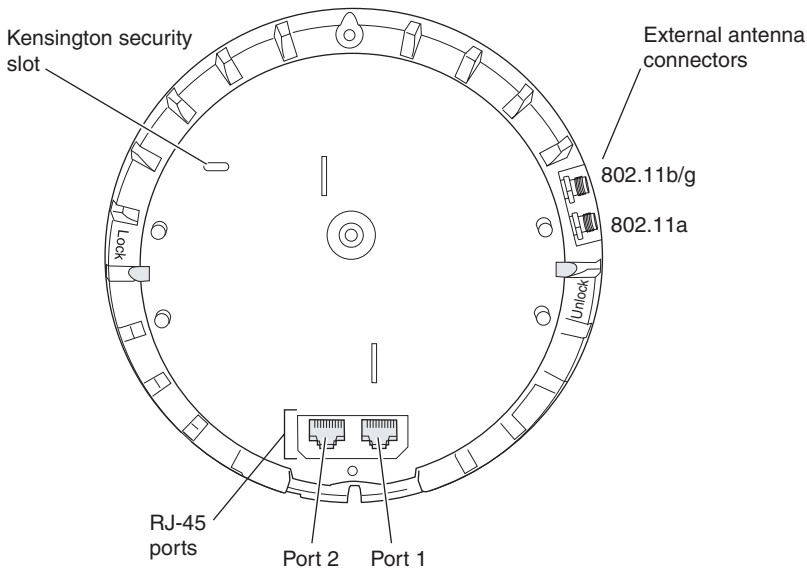**Figure 1.   MP Access Point Model MP-422—Top View**

Figure 2.   MP Access Point Model MP-422—Bottom View

Cable Ports

The MP-422 has two RJ-45 ports. (See Figure 2.) Each port provides a 10/100BASE-TX Ethernet connection to an MX switch. The connection can be direct to an MX-switch or indirect through an intermediate Layer 2 or Layer 3 network.

The MP receives power and data through the RJ-45 ports. Use a Category 5 (Cat 5) cable with straight-through signaling and standard RJ-45 connectors to connect an MP to an MX switch or other device in the network. The MP-422 supports 802.3af, and also can receive PoE from Trapeze switches and Trapeze-approved power injectors. (See the *Release Notes for Trapeze Networks Mobility Point Access Points*.)

The two RJ-45 ports support dual-homed configurations for redundancy. An MP uses only one link for booting, configuration, and data transfer. If the link becomes unavailable, the MP can reboot using the other link. The ports are identical except for logical numbering (1 or 2). You can use either port to connect an MP access point to an MX switch. However, an MP always attempts to boot on MP port 1 first. Only if the boot attempt on port 1 fails does the MP attempt to boot on port 2. If one port becomes unavailable, the other port can provide full power to the MP.

➡️ **Note.** MP access points do not support daisy-chain configurations. Do not connect the MP access point to another MP access point.

External Antenna Connectors

The MP-422 has connectors for attaching optional external antennas. (See Figure 2.) Table 1 lists the external antenna models.

**Table 1.   Trapeze External Antenna Models**

Model	Type	Gain	Beamwidth	
			Horizontal	Vertical
ANT-7360	802.11a	8 dBi	360°	15°
	802.11b/g	6 dBi	360°	25°
ANT-7360-OUT	802.11a	8 dBi	360°	15°
	802.11b/g	6 dBi	360°	22°
ANT-5060 (ASTN6S)[1]	802.11a	14.5 dBi	60°	14°
ANT-5120 (ASTN6T)	802.11a	12.5 dBi	120°	14°
ANT-5180 (ASTN6H)	802.11a	10.8 dBi	180°	14°
ANT-1060	802.11b/g	10 dBi	60°	65°
ANT-1120	802.11b/g	7 dBi	120°	60°
ANT-1180	802.11b/g	6 dBi	180°	40°

1.   The numbers in parentheses are the numbers that appear on the back of an 802.11a antenna's reflector plate. To verify an 802.11a external antenna's model number, look for the number in parentheses.

➡ **Note.** The MP-422 radios are certified for use only with these external antennas.

Figure 3 shows some of the 802.11b/g antennas.

Figure 3. External 802.11b/g Antennas

Model ANT-1060

Model ANT-1120

840-9502-0077
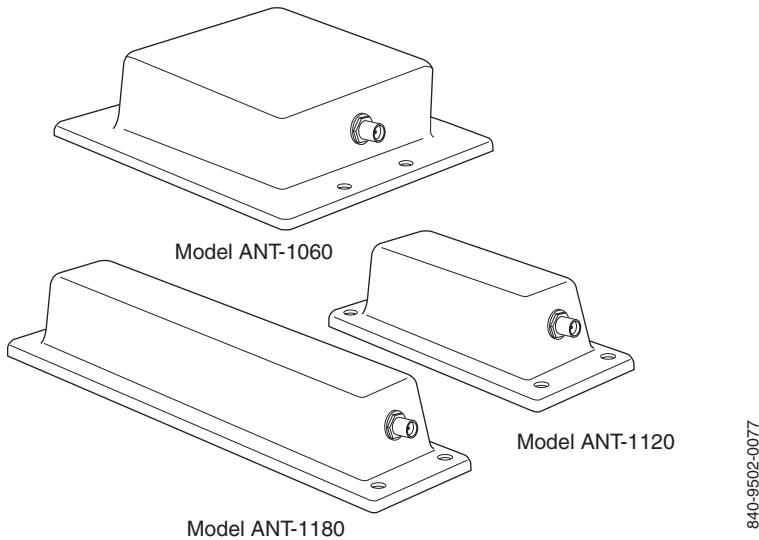
Model ANT-1180

The 802.11a external antennas look similar to the 802.11b/g model ANT-1180, but each has a reflector plate specific to the model number. You can identify an 802.11a external antenna's model by looking on the back of its reflector plate. Do not reverse or remove the reflector plate. It is required for antenna operation.

Each antenna comes with a connector cable, mounting hardware, and installation instructions.

⚠ **Caution!** The external connectors on the MP are labeled: 11B/G and 11A. Each connector is a standard SMA connector. Make sure you attach the antenna to the correct connector.

➡ **Note.** Operation in the band 5.15–5.25 Ghz is restricted to indoor use only.

Kensington Security Slot

Models MP-422 has a slot for attachment of a Kensington security cable. The cable is not included with the MP but can be ordered separately.

MP Mounting Options

You can mount an MP access point on any of the following types of surfaces:

● Suspended T-bar ceiling

● Junction box

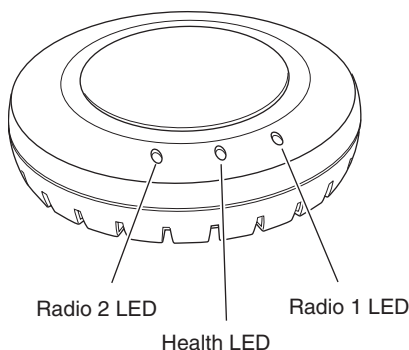● Solid surface wall or ceiling

● Tabletop

➡ **Note.** The solid surface mounting option requires Cat 5 cable that does not have strain relief. The other mounting options can use Cat 5 cable with or without strain relief.

Status LEDs

The MP has LEDs that provide status information for the device. Figure 4 shows the locations of the LEDs. Table 2 describes the LEDs.

Figure 4. Health and Radio LEDs—MP-422

Radio 2 LED   Radio 1 LED

Health LED

840-9502-0010

Table 2.   MP Access Point LEDs—MP-422

LED	Appearance	Meaning
Health	Solid green	All the following are true: • Management link with an MX switch is operational. • MP access point has booted. • MP access point has received a valid configuration from an MX switch. • At least one radio is enabled or is in sentry mode.
	Solid amber	MP access point is waiting to receive boot instructions and a configuration file from an MX switch.
	Alternating green and amber	MP access point is booting and receiving its configuration file from an MX switch. After the MP boots and receives its configuration, this LED appearance persists until a radio is enabled or is placed in sentry mode.
Radio 1 Radio 2	Solid green	A client is associated with the radio.
	Blinking green	Associated client is sending or receiving traffic.
	Blinking amber	Non-associated client is sending or receiving traffic.
	Alternating green and amber	Radio is unable to transmit. This state can occur due to any of the following: • Excessive radio interference in the environment is preventing the radio from sending beacons. • DFS has detected radar and is holding down traffic. • The radio has failed.
	Unlit	Means one of the following: • Radio is disabled and active scan is *enabled*. (The radio is in sentry mode.) • Radio is enabled, but no clients are associated with it.

Connection Options

You can connect an MP access port directly to an MX switch port or indirectly to MX switches through an intermediate Layer 2 or Layer 3 network. In either case, use Category 5 (CAT 5) cable with straight-through signaling for each MP connection.

You also can provide data link redundancy by connecting both of its ports directly to MX switch ports or indirectly to MX switches through the network.

You can provide MX management redundancy even on a single MP Ethernet port by connecting the MP indirectly to multiple MX switches through an intermediate Layer 2 or Layer 3 network.

➡️ **Note.** Install the Cat 5 cables for the MP access point at the installation site before installing the access point itself. During installation, you will insert the Cat 5 cable(s) into the MP port(s) before attaching the access point to the bracket.

3

Installing and Connecting an MP-422

➡ **Note.** Before installing an MP access point, you might need to generate a network plan and an MP work order with RingMaster. (See "RingMaster Network Plan and Work Orders" on page 18.)

Unpacking an MP

The shipping carton for an MP access point contains the following items:

- One MP access point

- Mounting kit:

    - One universal mounting bracket (attached to the MP)

    - One paper mounting template (used for marking cutting areas and screw holes)

    - One two-piece 14.2-mm (9/16-inch) T-bar clamp

    - One two-piece 15.9-mm (5/8-inch) T-bar clamp

    - One two-piece 23.9-mm (15/16-inch) T-bar clamp

    - Two #6 sheet metal screws and two drywall anchors

    - Three adhesive rubber feet

- One documentation pack that includes quick mounting instructions and a registration card (not shown)

Figure 5 shows the contents of the shipping carton for model MP-422.

Figure 5.   MP-422 Shipping Carton Contents

Mobility point

Mounting template

T-bar clamps

Rubber feet

Universal mounting bracket

Mounting hardware

840-9502-0001
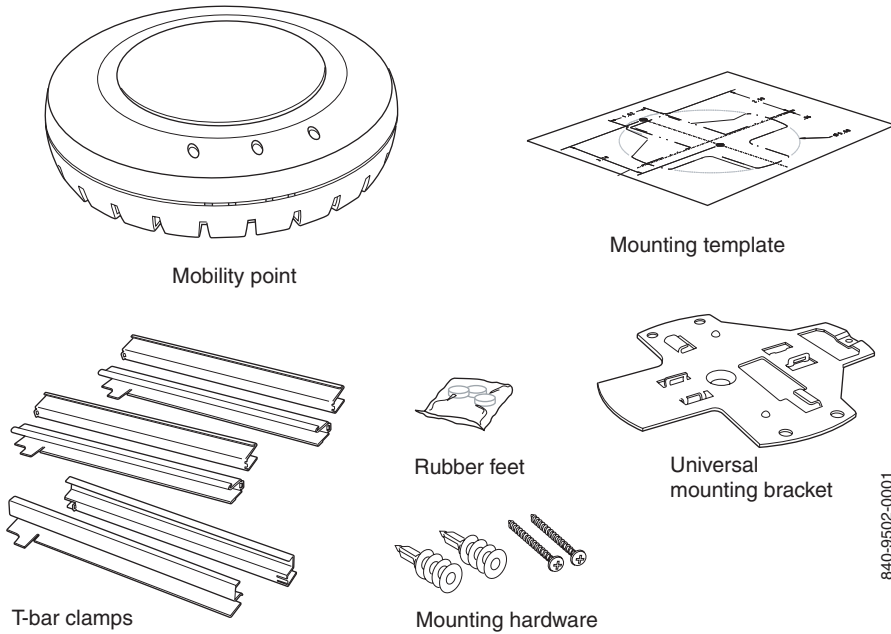
Before you begin installation:

1   Open the carton and carefully remove the contents, if you have not already done so.

2   Place the packing materials back in the carton and save the carton.

3   Verify that you received each item in the previous list. If any item is missing or damaged, contact Trapeze Networks.

Installation Requirements and Recommendations

For best results, follow these requirements and recommendations before installing an MP access point.

RingMaster Network Plan and Work Orders

If you are using RingMaster to plan your Trapeze Networks Mobility System installation, you might want to create and verify a network plan for the entire Trapeze network installation and generate an MP work order, before installing MP access points. A network plan and the MP work orders generated from it provide the following information about MP access point installation and configuration:

● Number of MP access points required for adequate WLAN capacity in each coverage area

● Detailed installation location for each MP access point

● Settings for all MP access points in the WLAN

(For information about installing RingMaster, creating and verifying a network plan, and generating an MP work order, see the *Trapeze RingMaster User's Guide* and *Trapeze RingMaster Reference Manual*.)

MX Switch Recommendation

Trapeze Networks recommends that you install and configure the MX switch before installing an MP access point. If the switch is already installed and configured for the MP access point(s), you can immediately verify the cable connection(s) when you plug the cable(s) into the MP access point.

⚠️ **Caution!** MP model MP-422 is designed to receive power only from an 802.3af-compliant source, a Trapeze Networks Mobility Exchange (MX) switch, or a Trapeze-approved power injector. Connecting an MP access point to a Power over Ethernet (PoE) device that is not approved by Trapeze Networks can damage the equipment.

(For information about connecting an MP access point to an MX switch port, see "Connecting an MP to an MX Switch" on page 50.)

Wall Installation Recommendations

If you plan to install an MP on a partial wall or other vertical surface, orient the top of the access point (the side with the LEDs) toward the intended coverage area. The radio antennas transmit through the top of the access point but not through the bottom (where the bracket is).

This recommendation does not apply if you plan to use external antennas. You can orient the antennas independently of the MP itself. Orient an external antenna to face the intended coverage area.

MP Radio Safety Advisories

When you enable the MP radio(s) as part of MX switch configuration, the radios are able to receive and transmit radio frequency energy as soon as you connect the MP access point(s) to the MX switch, either directly or through the network.

Radio Frequency Exposure

Federal Communications Commission (FCC) Docket 96-8 for Spread Spectrum Transmitters specifies a safety standard for human exposure to radio frequency electromagnetic energy emitted by FCC-certified equipment. When used with the proper antennas (shipped in the product), Trapeze Networks MP access point products meet the uncontrolled environmental limits found in OET-65 and ANSI C95.1-1991. Proper installation of the MP access point according to the instructions in this manual will result in user exposure that is below the FCC recommended limits.

Additional Radio Safety Advisories

(For translations of warnings, see *Trapeze Regulatory Information*.)

⚠ **Warning!** In the U.S., locate the MP access point and any externally attached antennas a minimum of 20 cm (7.9 inches) away from people. This safety warning conforms with FCC radio frequency exposure limits for dipole antennas such as those used in the MP access point.

⚠ **Warning!** Do not operate the MP access point near unshielded blasting caps or in an otherwise explosive environment unless the device has been modified for such use by qualified personnel.

⚠ **Warning!** Do not touch or move the MP access point when the antennas are transmitting or receiving.

⚠ **Warning!** Do not hold any radio device so that the antenna is very close to or touching the face, eyes, or other exposed body part while the device's radio antenna is transmitting.

⚠ **Warning!** Before using a wireless device in a hazardous location, consult the local codes, national codes, and safety directors of the location for usage constraints.

Cable Requirements

⚠ **Warning!** Do not connect or disconnect cables or otherwise work with the MP access point hardware during periods of lightning activity.

➡ **Note.** The MP access point is intended for indoor use only. Do not install the device outdoors, unless you install it in a properly installed Trapeze Networks outdoor MP enclosure.

➡ **Note.** To reduce the possibility of connection interference caused by dust, clean the Cat 5 connector pins before inserting a cable into an MP access point.

Cat 5 cable with straight-through signaling must be installed at the site before you install an MP access point. A single connection requires one cable. A dual-homed connection requires two cables.

Table 3 lists the pin signals for 10/100 Ethernet straight-through wiring. Pins 4, 5, 7, and 8 are used when Trapeze Power over Ethernet (PoE) is enabled on the port. *RD* means *Receive Data* and *TD* means *Transmit Data*.

Table 3.   10/100 Ethernet Straight-Through Pin Signals

MX Switch		Other Device	
Pin	**Function**	**Pin**	**Function**
1	RD+	1	TD+
2	RD-	2	TD-
3	TD+	3	RD+
4	PoE+	4	PoE+
5	PoE+	5	PoE+
6	TD-	6	RD-
7	PoE-	7	PoE-
8	PoE-	8	PoE-

Mounting an MP access point on a solid surface requires Cat 5 cable that does not have strain relief. For installation on all other surfaces, you can use Cat 5 cable with or without strain relief.

(For more information about cables, see "Cable Ports" on page 9.)

Installing an MP-422

To install an MP-422, use one of the procedures in this section.

Installation Hardware and Tools

Table 4 lists the mounting hardware and tools required for each type of installation.

Table 4.   Required Mounting Hardware and Tools—Model MP-422

Mounting Option	Required Hardware and Tools	Included with the Product
Suspended ceiling—flush ceiling tiles	Mounting template	Yes
	Universal mounting bracket	Yes
	T-bar clamp	Yes
	Note: A T-bar clamp is not required for a 23.9-mm (15/16-inch) T-bar ceiling with flush ceiling tiles.	
	Box cutter	No
	Small screwdriver (3-mm or 1/8-inch)	No
Suspended ceiling—drop ceiling tiles	Mounting template	Yes
	Universal mounting bracket	Yes
	T-bar clamp	Yes
	Box cutter	No
	Small screwdriver (3-mm or 1/8-inch)	No

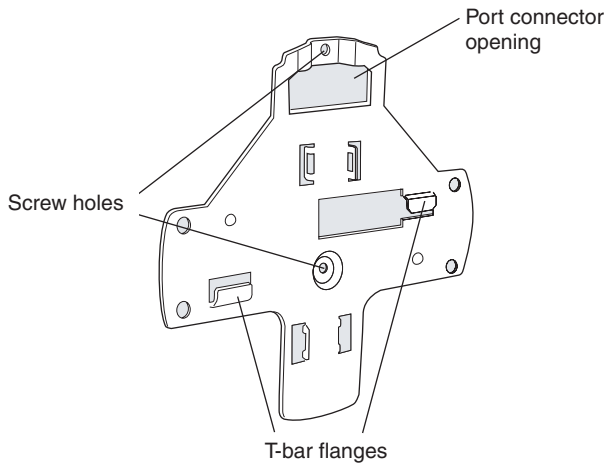**Table 4.   Required Mounting Hardware and Tools—Model MP-422 (continued)**

Mounting Option	Required Hardware and Tools	Included with the Product
Junction box	Junction box	No
	Two #6-32 x 1-inch machine screws	Yes
	Universal mounting bracket	Yes
	Small screwdriver (3-mm or 1/8-inch)	No
	#2 Phillips-head screwdriver	No
Solid wall or ceiling	Two #6 sheet metal screws and two drywall anchors	Yes
	Universal mounting bracket	Yes
	Hammer	No
	Small screwdriver (3-mm or 1/8-inch)	No
	#2 Phillips-head screwdriver	No
Tabletop	Universal mounting bracket	Yes
	Three adhesive rubber feet	Yes
	Small screwdriver (3-mm or 1/8-inch)	No

➡️ **Note.** The MP-422 model is UL2043 plenum rated, so it also can be installed in the space above the ceiling if preferred.

Figure 6 shows the universal mounting bracket.

Figure 6.   Universal Mounting Bracket

Port connector
opening

Screw holes

840-9502-0018

T-bar flanges

Suspended Ceiling Installation—Flush Ceiling Tiles

(For required mounting hardware and tools, see Table 4 on page 22.)

1   Select an installation location that is centered over a T-bar in the ceiling.

2   Cut a hole as follows in the ceiling tile for the Cat 5 cable(s):

a   Place the mounting template over the area where you plan to install the MP access point.

b   Use the box cutter to cut along the line marking the opening for the port connectors.

c   Remove the mounting template and the material you cut from the ceiling panel.

3   Determine whether to install a T-bar clamp onto the ceiling T-bar:

● If the T-bar width is 14.2 mm (9/16 inches), you need to install the 14.2-mm (9/16-inch) T-bar clamp. Go to step 4.

● If the T-bar width is 23.9 mm (15/16 inches), the universal mounting bracket fits directly onto the T-bar. Go to step 5.

4 Install the 14.2-mm (9/16-inch) T-bar clamp onto the ceiling T-bar as shown in Figure 7.

   a Slide each half of the clamp onto the T-bar so that the clamp lip is fully on the T-bar.

   b Slide the two halves of the clamp toward each other until the tabs are inserted completely into the holes and the clamp fits snugly on the T-bar.

Figure 7. Step 4—Installing a T-bar Clamp
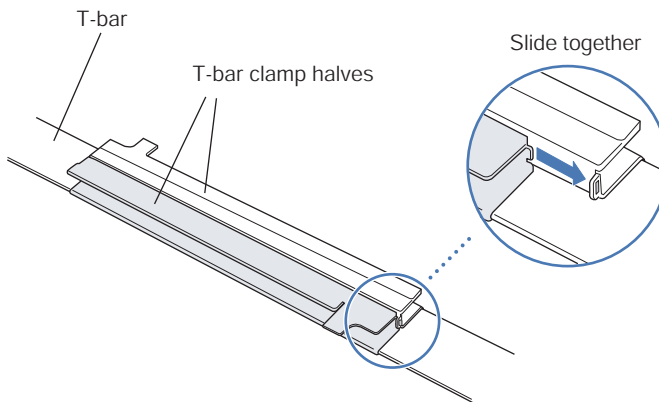
5 Unlock the universal mounting bracket from the MP access point by inserting the 3-mm or 1/8-inch screwdriver into the *Unlock* hole on the MP access point as shown in Figure 8.

⚠️ **Caution!** To avoid damage to the MP access point's lock mechanism or electronic components, do not use excessive force when inserting a tool into the *Unlock* or *Lock* hole.
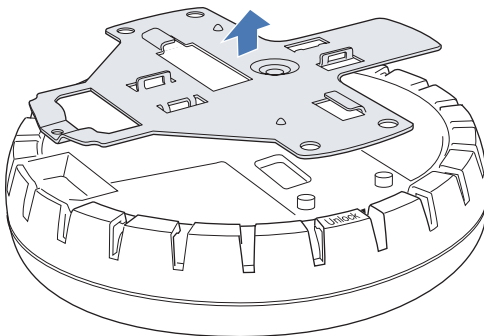
Figure 8.   Step 5—Unlocking the Bracket
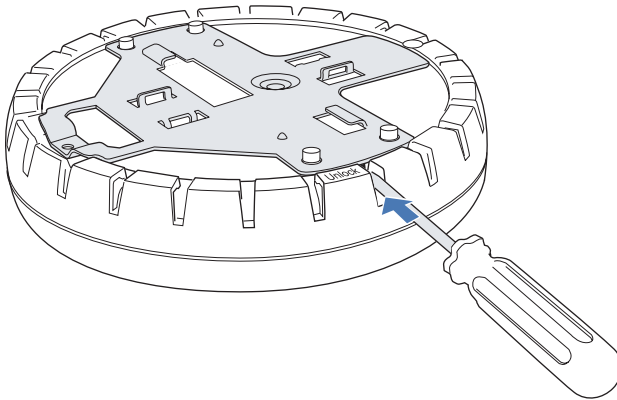
6   Remove the bracket as shown in Figure 9.
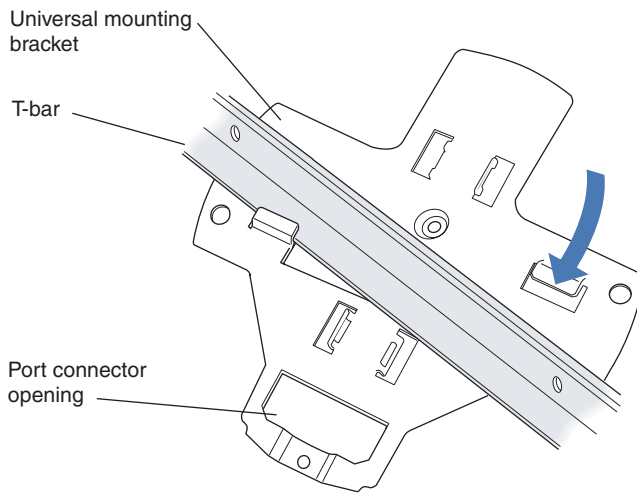
Figure 9.   Step 6—Removing the Bracket


7   Install the universal mounting bracket as follows onto the T-bar or T-bar clamp:

a   As shown in Figure 10, place the universal mounting bracket against the T-bar or clamp so that the two screw holes face downward and the two T-bar flanges face upward and are adjacent to the T-bar edges.

Figure 10. Step 7—Top View

(Viewed from above ceiling tiles, looking down.)

b Properly align the bracket for mounting by placing the bracket so that its port connector opening is to the left of the hole you cut for the cables.

c Rotate the universal mounting bracket clockwise until the flanges snap into place on the T-bar or clamp as shown in Figure 11.

Figure 11. Step 7—Bottom View
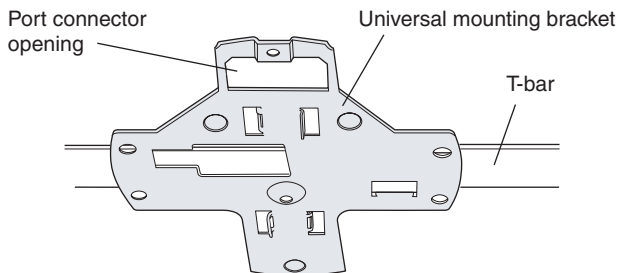
8 Pull the Cat 5 cable(s) about 15 cm (about 6 inches) out of the hole in the ceiling tile and through the port connector opening to create enough slack to insert the cable(s).

9 Insert the Cat 5 cable(s) into the connector(s):

- For a single connection, use the connector for port 1.

- For redundancy, insert one cable into each connector.

10 Install the Kensington lock, if you plan to use one.

  a Loop the Kensington lock's cable around an object that cannot be moved or damaged by a person pulling on the cable.

  b Insert the key into the Kensington lock.

  c Insert the Kensington lock into the security slot on the MP.

  d Rotate the key right or left to secure the lock to the MP.

  e Pull on the lock to verify that it is secured to the MP.

  f Remove the key.

11 Lift the MP access point into place on the universal mounting bracket as shown in Figure 12.

Make sure the cable feeds properly into the ceiling as you lift the device, and does not become trapped between the access point and the bracket.

**Figure 12. Step 10—Placing the MP Access Point on the Bracket**
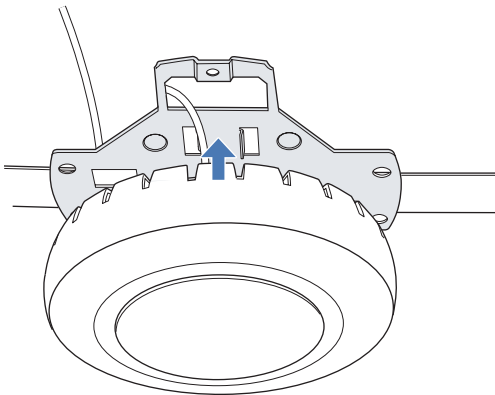
840-9502-0002

12 Lock the MP access point onto the bracket by inserting the 3-mm or 1/8-inch screwdriver into the *Lock* hole on the access point as shown in Figure 13.

⚠ **Caution!** To prevent possible damage to the MP access point, make sure the device is fully locked onto the bracket before letting go of it.

Figure 13. Step 11—Locking the Bracket
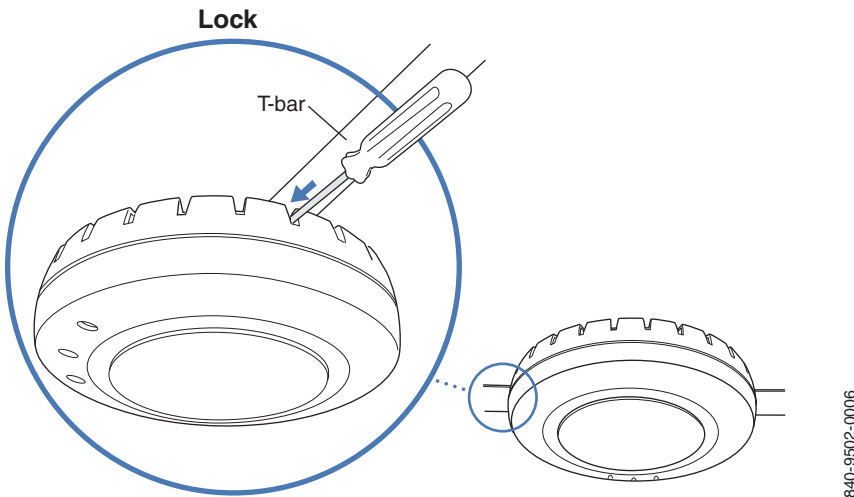
13 To ensure that the MP access point is fully locked onto the bracket, gently pull down on the access point and attempt to rotate it from side to side.

14 If the access point comes off the bracket, relock the device onto the bracket as described in step 12 on page 29.

15 If the MP requires an external antenna, install and connect the antenna. (See "Connecting an MP to an External Antenna" on page 49.)

16 If the other ends of the Cat 5 cable(s) are not already connected and the link activated, go to "Connecting an MP to an MX Switch" on page 50. Otherwise, go to "Verifying MP Health" on page 51.

Suspended Ceiling Installation—Drop Ceiling Tiles

(For required mounting hardware and tools, see Table 4 on page 22.)

1   Select an installation location that is centered over a T-bar in the ceiling.

2   Cut a hole as follows in the ceiling tile for the Cat 5 cable(s):

    a   Place the mounting template over the area where you plan to install the MP access point.

    b   Use the box cutter to cut along the line marking the opening for the port connectors.

    c   Remove the mounting template and the material you cut from the ceiling panel.

3   Install the T-bar clamp that fits the T-bar:

    a   Slide each half of the clamp onto the T-bar so that the clamp lip is fully on the T-bar.

    b   Slide the two halves of the clamp toward each other until the tabs are inserted completely into the holes and the clamp fits snugly on the T-bar.
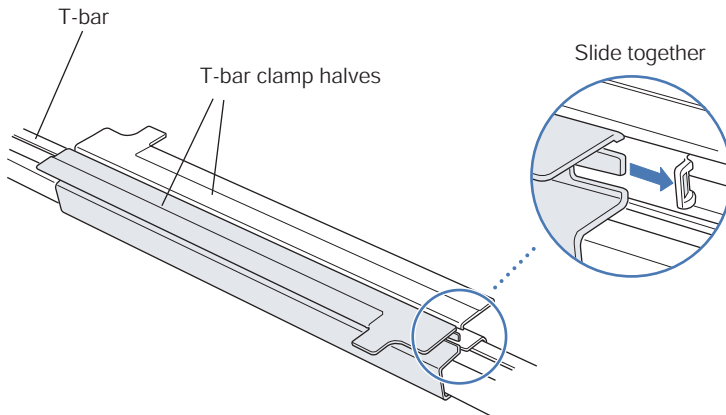
Figure 14 shows an example for a 23.9-mm (15/16-inch) T-bar. Figure 15 shows an example for a 15.9-mm (5/8-inch) T-bar.

Figure 14. Step 3—Installing the T-bar Clamp for a 23.9-mm (15/16-inch) T-bar
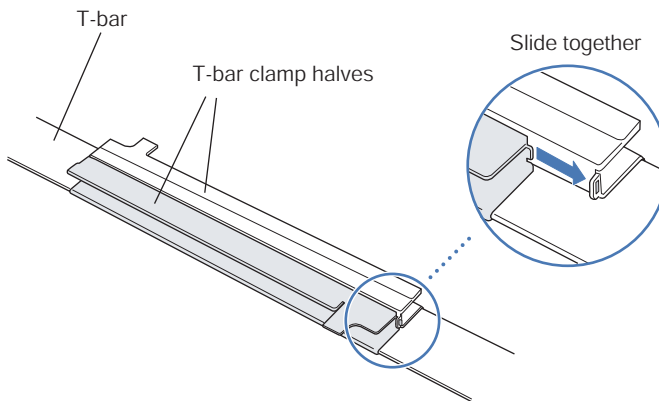
**Figure 15. Step 3—Installing the T-bar Clamp for a 15.9-mm (5/8-inch) T-bar**

4   Unlock the universal mounting bracket from the MP access point by inserting the 3-mm or 1/8-inch screwdriver into the *Unlock* hole on the MP access point as shown in Figure 16.
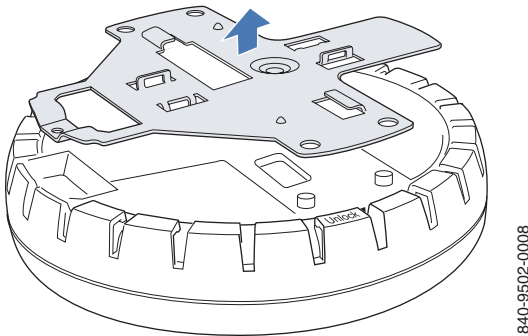
⚠ **Caution!** To avoid damage to the MP access point's lock mechanism or electronic components, do not use excessive force when inserting a tool into the *Unlock* or *Lock* hole.

**Figure 16. Step 4—Unlocking the Bracket**
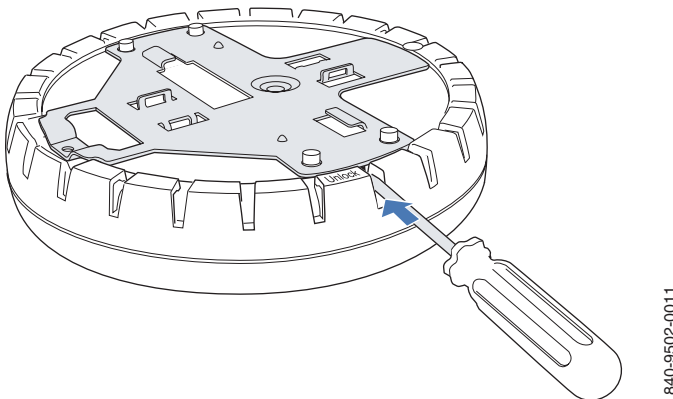
5   Remove the bracket as shown in Figure 17.

**Figure 17. Step 5—Removing the Bracket**

840-9502-0008

6   Install the universal mounting bracket as follows onto the T-bar clamp:

a   As shown in Figure 18, place the universal mounting bracket against the T-bar clamp so that the two screw holes face downward and the two T-bar flanges face upward and are adjacent to the T-bar edges.

b   Properly align the bracket for mounting by placing the bracket so that its port connector opening is to the left of the hole you cut for the cables.

c   Rotate the universal mounting bracket clockwise until the flanges snap into place on the T-bar clamp as shown in Figure 19.

Figure 18. Step 6—Top View

Universal mounting
bracket

T- bar

T-bar clamps
*(attached
to T-bar)*

Port connector
opening
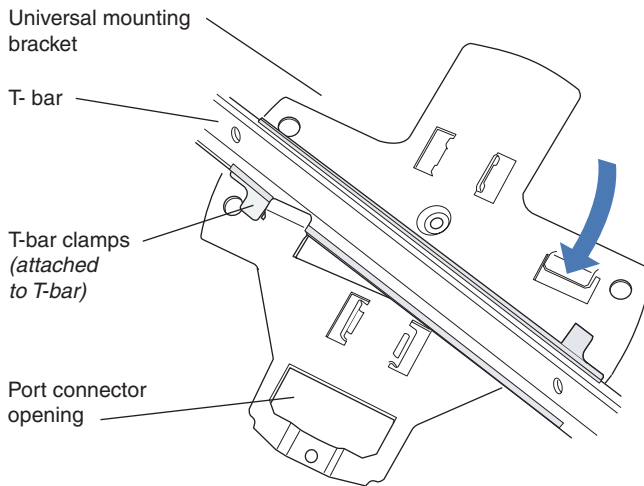
840-9502-0012

(Viewed from above ceiling tiles, looking down.)

Figure 19. Step 6—Bottom View

Port connector
opening

Universal mounting bracket

T-bar
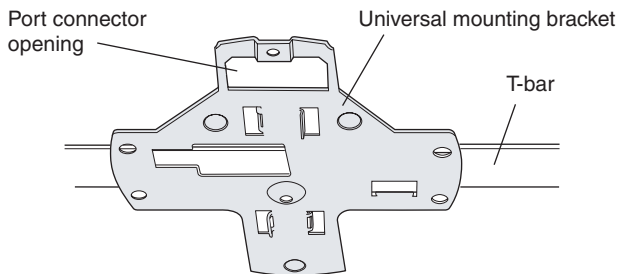
840-9502-0004

7 Pull the Cat 5 cable(s) about 15 cm (about 6 inches) out of the hole in the ceiling tile and through the port connector opening to create enough slack to insert the cable(s).

8 Insert the Cat 5 cable(s) into the connector(s):

- For a single connection, use the connector for port 1.

- For redundancy, insert one cable into each connector.

9 Install the Kensington lock, if you plan to use one.

    a Loop the Kensington lock's cable around an object that cannot be moved or damaged by a person pulling on the cable.

    b Insert the key into the Kensington lock.

    c Insert the Kensington lock into the security slot on the MP.

    d Rotate the key right or left to secure the lock to the MP.

    e Pull on the lock to verify that it is secured to the MP.

    f Remove the key.

10 Lift the MP access point into place on the universal mounting bracket as shown in Figure 20.

Make sure the cable feeds properly into the ceiling as you lift the device, and does not become trapped between the access point and the bracket.

Figure 20. Step 9—Placing the MP Access Point on the Bracket

840-9502-0002
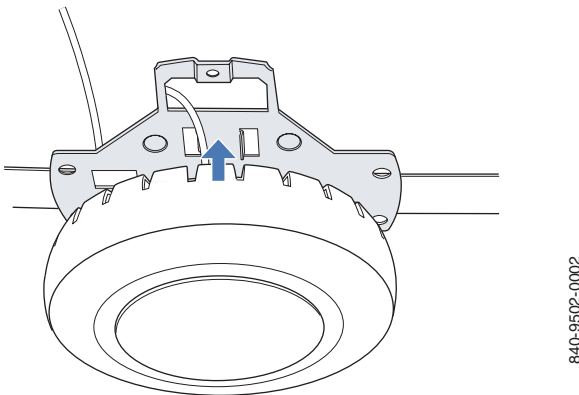
11 Lock the MP access point onto the bracket by inserting the 3-mm or 1/8-inch screwdriver into the *Lock* hole on the access point as shown in Figure 21.

⚠ **Caution!** To prevent possible damage to the MP access point, make sure the device is fully locked onto the bracket before letting go of it.

Figure 21. Step 10—Locking the Bracket
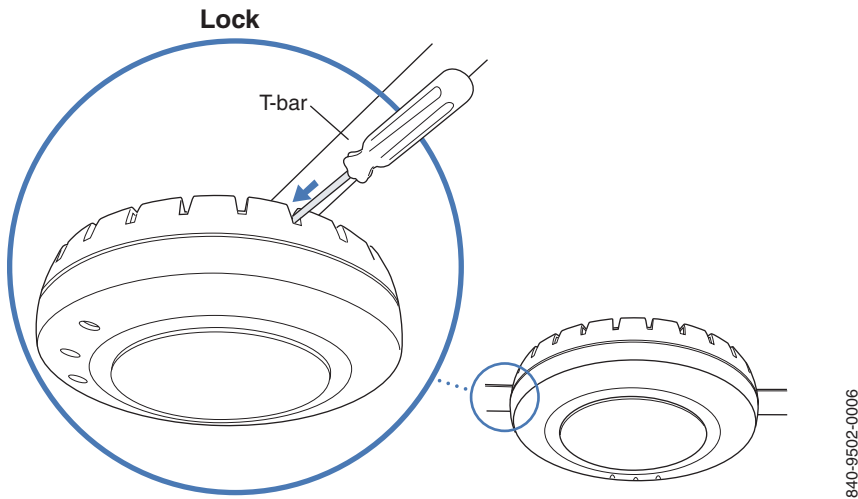
12 To ensure that the MP access point is fully locked onto the bracket, gently pull down on the access point and attempt to rotate it from side to side.

If the access point comes off the bracket, relock the device onto the bracket as described in step 11 on page 34.

13 If the MP requires an external antenna, install and connect the antenna. (See "Connecting an MP to an External Antenna" on page 49.)

14 If the other ends of the Cat 5 cable(s) are not already connected and the link activated, go to "Connecting an MP to an MX Switch" on page 50. Otherwise, go to "Verifying MP Health" on page 51.

Junction Box Installation

(For required mounting hardware and tools, see Table 4 on page 22.)

1 Unlock the universal mounting bracket from the MP access point by inserting the 3-mm or 1/8-inch screwdriver into the *Unlock* hole on the MP access point as shown in Figure 22.
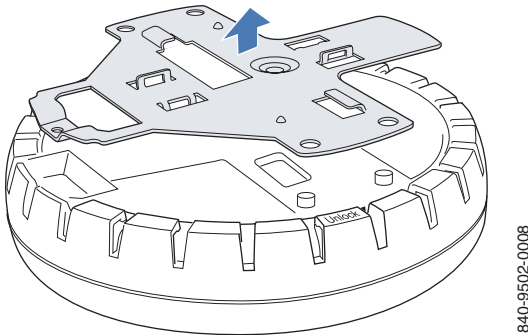
⚠ **Caution!** To avoid damage to the MP access point's lock mechanism or electronic components, do not use excessive force when inserting a tool into the *Unlock* or *Lock* hole.

Figure 22. Step 1—Unlocking the Bracket
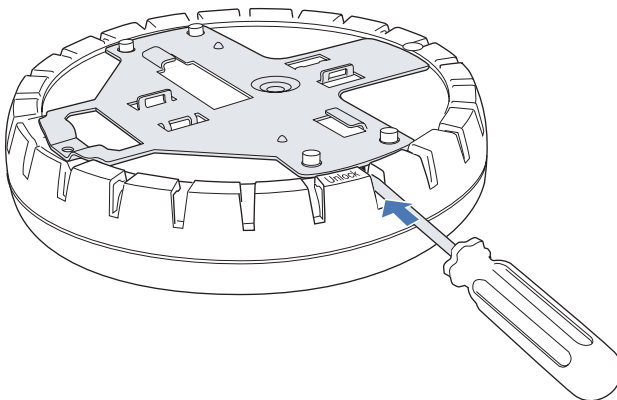
2 Remove the bracket as shown in Figure 23.

Figure 23. Step 2—Removing the Bracket

840-9502-0008

3   Attach the universal mounting bracket to the junction box as shown in
Figure 24:

a   Place the universal mounting bracket against the junction box so that the
two screw holes face the junction box and align over the screw holes in
the box.

b   Insert the #6-32 x 1-inch machine screws in the universal mounting
bracket's screw holes, and use a #2 Phillips-head screwdriver to tighten
them.

Figure 24. Step 3—Placing the Bracket on the Junction Box

Junction box

Port connector
opening
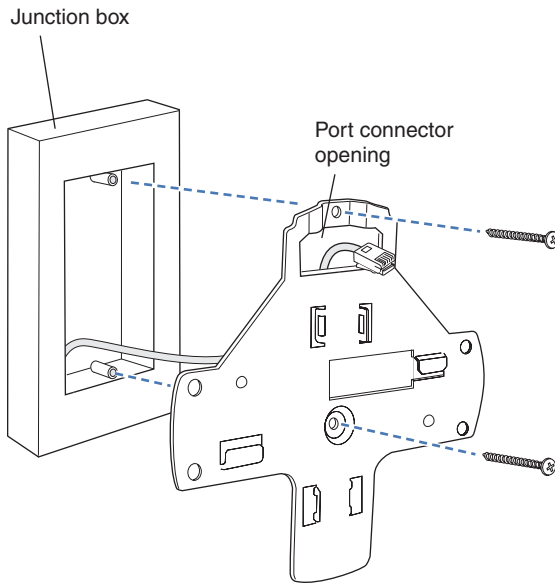
840-9502-0017

**4**   Pull the Cat 5 cable(s) about 15 cm (about 6 inches) out of the junction box
      and through the port connector opening to create enough slack to insert the
      cable(s) into the port connectors.

5   Insert the Cat 5 cable(s) into the connector(s):

   ●   For a single connection, use the connector for port 1.

   ●   For redundancy, insert one cable into each connector.

6   Install the Kensington lock, if you plan to use one.

   a   Loop the Kensington lock's cable around an object that cannot be moved
         or damaged by a person pulling on the cable.

   b   Insert the key into the Kensington lock.

   c   Insert the Kensington lock into the security slot on the MP.

   d   Rotate the key right or left to secure the lock to the MP.

   e   Pull on the lock to verify that it is secured to the MP.

   f   Remove the key.

7 Lift the MP access point into place on the universal mounting bracket.

Make sure the cable feeds properly into the junction box as you lift the device, and does not become trapped between the access point and the bracket.

8 Lock the MP access point onto the bracket by inserting the 3-mm or 1/8-inch screwdriver into the *Lock* hole on the access point as shown in Figure 25.

⚠ **Caution!** To prevent possible damage to the MP access point, make sure the device is fully locked onto the bracket before letting go of it.

Figure 25. Step 7—Locking the Bracket

Lock

840-9502-0062
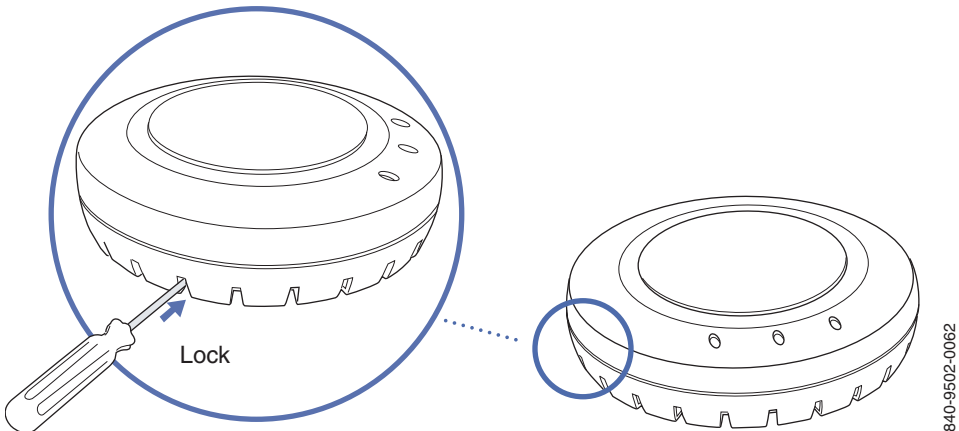
9 To ensure that the MP access point is fully locked onto the bracket, gently pull down on the access point and attempt to rotate it from side to side.

If the access point comes off the bracket, relock the device onto the bracket as described in step 8 on page 39.

10 If the MP requires an external antenna, install and connect the antenna. (See "Connecting an MP to an External Antenna" on page 49.)

11 If the other ends of the Cat 5 cable(s) are not already connected and the link activated, go to "Connecting an MP to an MX Switch" on page 50. Otherwise, go to "Verifying MP Health" on page 51.

Solid Wall or Ceiling Installation

➡️ **Note.** The solid surface mounting option requires Cat 5 cable that does not have strain relief, unless you plan to route the cable through a hole in the wall or ceiling. The other options can use Cat 5 cable with or without strain relief.

(For required mounting hardware and tools, see Table 4 on page 22.)

1 Prepare holes in the wall or ceiling for the universal mounting bracket, using the following steps:

    a Place the paper mounting template over the location where you want to install the MP access point.

    b Mark the screw hole location(s).

        ❍ If you plan to route the Cat 5 cable externally along the wall or ceiling, mark the locations of both the center screw hole and the screw hole by the port connector opening.

        ❍ If you plan to route the Cat 5 cable through a hole in the wall or ceiling, mark the location of the center screw hole only. You cannot use the screw hole by the port connector opening if you cut a hole for the opening.

➡️ **Note.** Do not mark the four holes on the edges of the bracket. (These are the holes indicated by the dashed lines in Figure 28.) The MP access point fits into these holes. They are not screw holes.

    c Remove the template.

2 Install the drywall anchor(s):

    a Hammer a drywall anchor into each hole, up to the beginning of the threads on the anchor.

    b Screw each anchor the rest of the way into its hole using a #2 Phillips-head screwdriver.

    c Remove the screw from each anchor and save the screw(s) for step 6 on page 42.

3 Unlock the universal mounting bracket from the MP access point by inserting the 3-mm or 1/8-inch screwdriver into the *Unlock* hole on the MP access point as shown in Figure 26.

⚠ **Caution!** To avoid damage to the MP access point's lock mechanism or electronic components, do not use excessive force when inserting a tool into the *Unlock* or *Lock* hole.
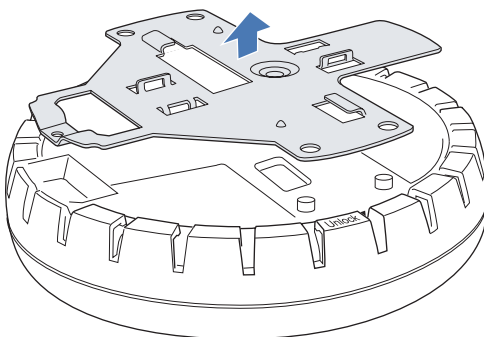
Figure 26. Step 3—Unlocking the Bracket
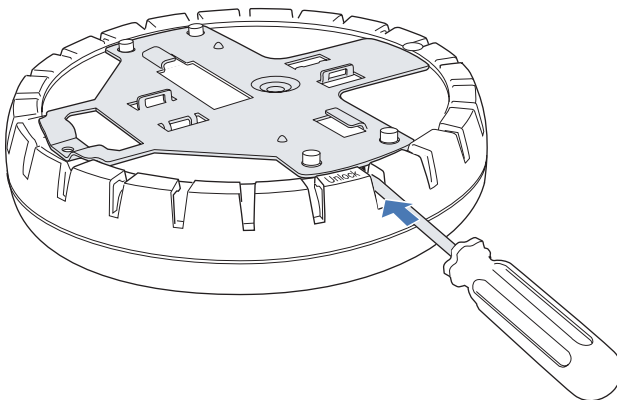
4 Remove the bracket as shown in Figure 27.

Figure 27. Step 4—Removing the Bracket

5 As shown in Figure 28, feed the Cat 5 cable(s) through the port connector opening and align the universal mounting bracket over the drywall anchors so that the two screw holes in the bracket face the drywall anchors.

6 Insert the #6 sheet metal screws into the screw holes, and tighten them to secure the universal mounting bracket to the wall or ceiling.

(If you routed the Cat 5 cable through a hole in the wall or ceiling, insert the screw into the center screw hole only.)

> ➡ **Note.** Do not insert screws in the four holes on the edges of the bracket. (These are the holes indicated by the dashed lines in Figure 28.) The MP access point fits into these holes. They are not screw holes.

Figure 28. Steps 5 and 6—Bracket Placement on Solid Wall or Ceiling
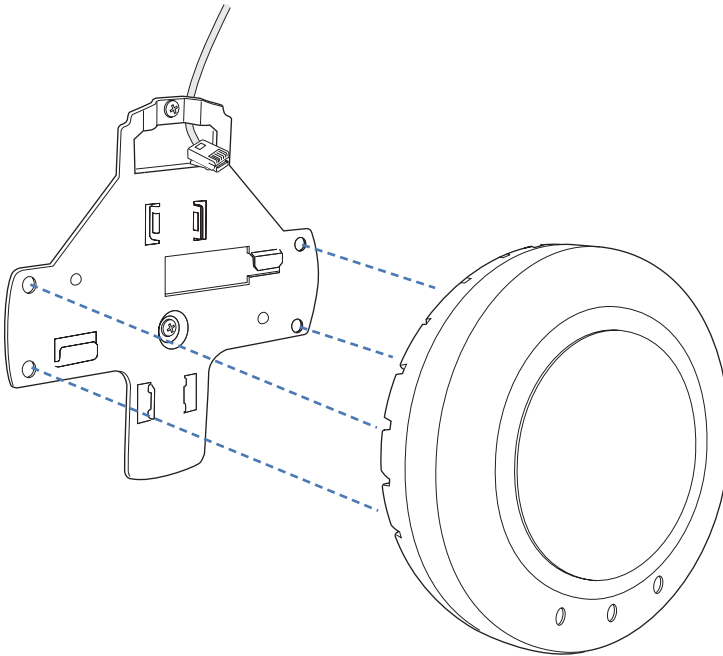
840-9502-0015

7 Insert the Cat 5 cable(s) into the connector(s):

● For a single connection, use the connector for port 1.

● For redundancy, insert one cable into each connector.

8 Install the Kensington lock, if you plan to use one.

a Loop the Kensington lock's cable around an object that cannot be moved or damaged by a person pulling on the cable.

b Insert the key into the Kensington lock.

c Insert the Kensington lock into the security slot on the MP.

d Rotate the key right or left to secure the lock to the MP.

e Pull on the lock to verify that it is secured to the MP.

f Remove the key.

9 As shown in Figure 29, place the MP access point on the bracket, making sure to remove any slack that occurs in the cable between the bracket and the MP access point.

Figure 29. Step 8—Cable Placement

Cable

Universal mounting bracket
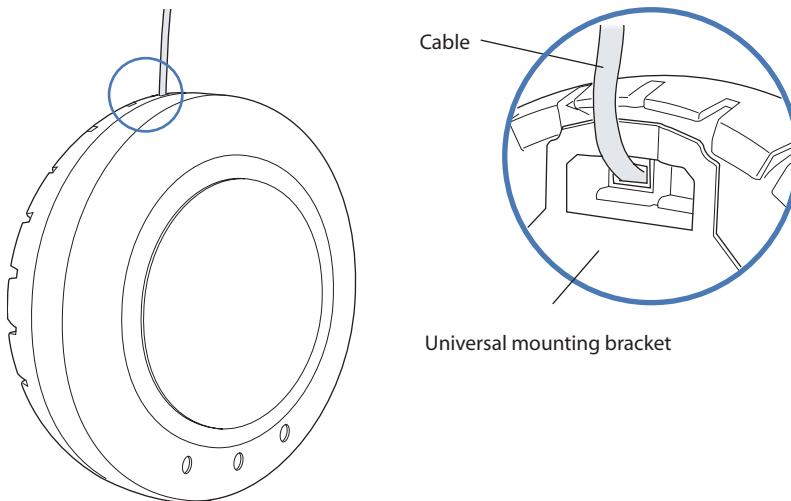
840-9502-0016

10 Lock the MP access point onto the bracket by inserting the 3-mm or 1/8-inch screwdriver into the *Lock* hole on the access point as shown in Figure 30.

⚠ **Caution!** To prevent possible damage to the MP access point, make sure the device is fully locked onto the bracket before letting go of it.

Figure 30. Step 9—Locking the Bracket

Lock

840-9502-0062
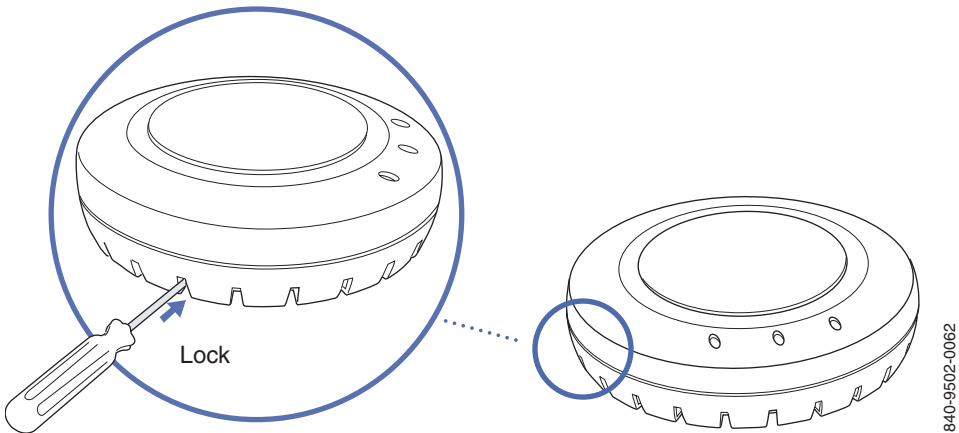
11 To ensure that the MP access point is fully locked onto the bracket, gently pull on the access point and attempt to rotate it from side to side.

If the access point comes off the bracket, relock the device onto the bracket as described in step 10 on page 44.

12 If the MP requires an external antenna, install and connect the antenna. (See "Connecting an MP to an External Antenna" on page 49.)

13 If the other ends of the Cat 5 cable(s) are not already connected and the link activated, go to "Connecting an MP to an MX Switch" on page 50. Otherwise, go to "Verifying MP Health" on page 51.

Tabletop Installation

(For required mounting hardware and tools, see Table 4 on page 22.)

1   Reverse the universal mounting bracket:

a   Unlock the universal mounting bracket from the MP access point by inserting the 3-mm or 1/8-inch screwdriver into the *Unlock* hole on the MP access point as shown in Figure 31.

⚠ **Caution!** To avoid damage to the MP access point's lock mechanism or electronic components, do not use excessive force when inserting a tool into the *Unlock* or *Lock* hole.

Figure 31. Step 1a—Unlocking the Bracket
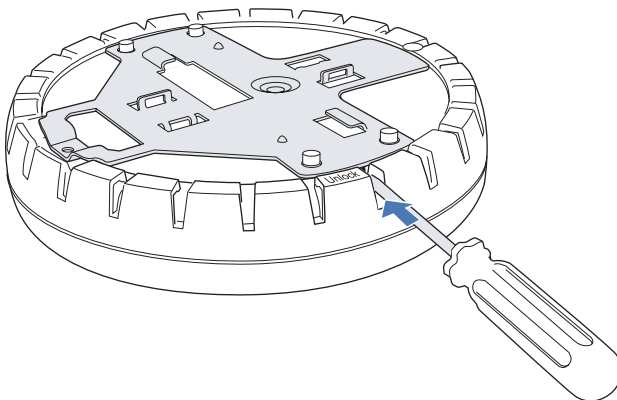
    b   Remove the bracket as shown in Figure 32.

Figure 32. Step 1b—Removing the Bracket
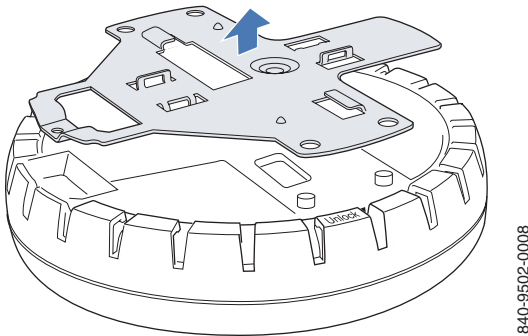
    c   Turn over the universal mounting bracket, then align the bracket over the cable ports and the four mounting posts as shown in Figure 33.

Figure 33. Step 1c—Turning Over the Bracket
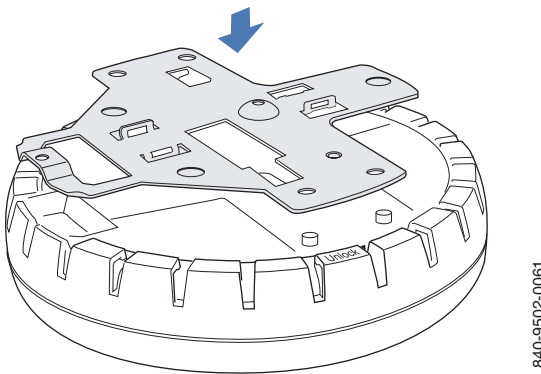
    d   Once the bracket is fully seated, lock the bracket onto the MP access point by inserting the 3-mm or 1/8-inch screwdriver into the *Lock* hole on the access point as shown in Figure 34.

Figure 34. Step 1d—Locking the Bracket
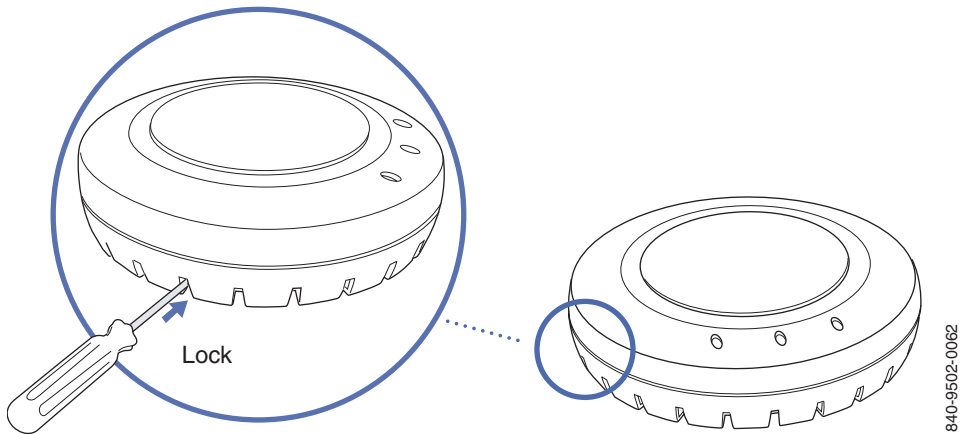
2   Attach the three rubber adhesive feet onto the universal mounting bracket, in the three location circles, as shown in Figure 35.

Figure 35. Step 2—Installing the Rubber Feet
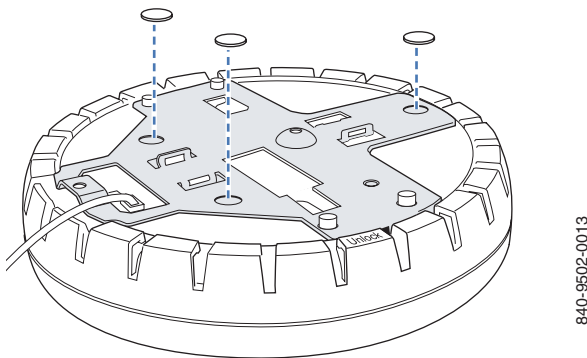
3   Insert the Cat 5 cable(s) into the connector(s):

●   For a single connection, use the connector for port 1.

●   For redundancy, insert one cable into each connector.

4 Install the Kensington lock, if you plan to use one.

    a Loop the Kensington lock's cable around an object that cannot be moved or damaged by a person pulling on the cable.

    b Insert the key into the Kensington lock.

    c Insert the Kensington lock into the security slot on the MP.

    d Rotate the key right or left to secure the lock to the MP.

    e Pull on the lock to verify that it is secured to the MP.

    f Remove the key.

5 Place the MP access point in the desired location on the table.

6 If the MP requires an external antenna, install and connect the antenna. (See "Connecting an MP to an External Antenna" on page 49.)

7 If the other ends of the Cat 5 cable(s) are not already connected and the link activated, go to "Connecting an MP to an MX Switch" on page 50. Otherwise, go to "Verifying MP Health" on page 51.

Connecting an MP to an External Antenna

Each radio in an MP-422 can use an optional Trapeze external antenna. To mount the antenna, see the instructions that come with the antenna.

⚠ **Caution!** The external antenna must be installed at least 20 cm from the MP access point.

To connect a mounted external antenna to an MP-422:

1 Attach the exterior antenna cable that is shipped with the antenna to the MP external antenna connector.

Both connectors are labeled to indicate the radio type. The MP has standard SMA connectors for attachment to the 802.11b/g antenna and to the 802.11a antenna.

(For the location of the external antenna connectors, see Figure 2 on page 8.)

⚠ **Caution!** The external connectors on the MP are labeled: 11B/G and 11A. Each connector is a standard SMA connector. Make sure you attach the antenna to the correct connector.

➡ **Note.** If the MP is installed in a Trapeze Networks outdoor MP enclosure, attach the antenna cable to the lightning surge arrestor (if installed) or the enclosure's SMA bulkhead connector.

2 Attach the other end of the antenna cable to the antenna.

3 If the other ends of the Cat 5 cable(s) are not already connected and the link activated, go to "Connecting an MP to an MX Switch" on page 50. Otherwise, go to "Verifying MP Health" on page 51.

Connecting an MP to an MX Switch

You can connect an MP access point directly to an MX switch or indirectly to the switch through an intermediate Layer 2 or Layer 3 network. If you are connecting the MP directly to an MX switch, use the following procedure to insert the cable into the MX switch and verify the link.

You can use the CLI or RingMaster to configure an MP connection. If you are installing the MP-422 as a Mesh AP in a WLAN Mesh or wireless bridge configuration, you must configure the MP connection before deploying the MP in its final location. (See the *Trapeze Mobility System Software Configuration Guide* or the *Trapeze RingMaster User's Guide*.)

Figure 36 shows how to insert a Cat 5 cable into 10/100 Ethernet port on an MX switch. Refer to this figure as you perform the procedure.

Figure 36. 10/100 Cat 5 Cable Installation
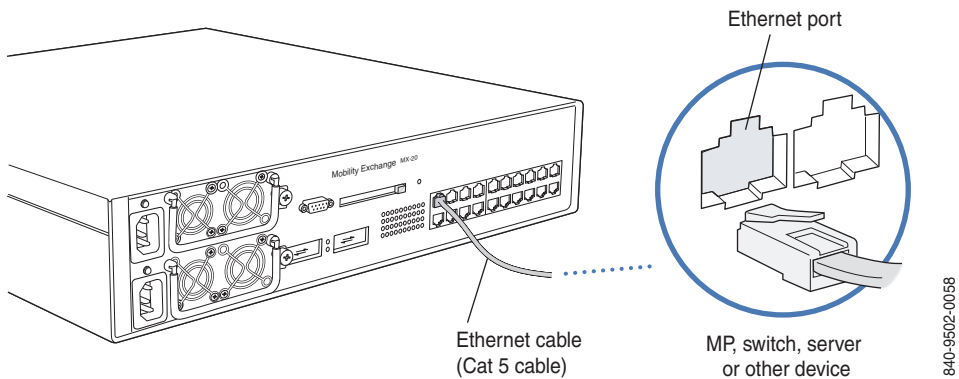
1 Insert a Cat 5 cable with a standard RJ-45 connector as shown in Figure 36. For connection to an MP access point, use a straight-through cable.

2 When the link is activated, observe the MP LED for the port on the MX switch:

MP LED Appearance	Meaning
Solid green	For an MP access point's active link, all the following are true: • MP access point has booted. • MP access point has received a valid configuration from the MX switch. • Management link with an MP access point is operational. • At least one radio is enabled or is in sentry mode. For an MP access point's secondary link, the link is present.
Alternating green and amber	MP access point is booting with an image received from the MX switch. After the access point boots and receives its configuration, this LED appearance persists until a radio is enabled or is placed in sentry mode.
Solid amber	PoE is on.
Blinking amber	MP is unresponsive or there is a PoE problem.
Unlit	PoE is off.

Verifying MP Health

After you install the MP access point and enable PoE on the Ethernet cable connected to the MP, you can easily verify the MP's status by observing the LEDs, particularly the health LED. (See Figure 4 on page 12.)

The health or LINK LED indicates whether the MP access point is ready for operation.

● If the LED is green and glowing steadily, the MP has been booted successfully by the MX switch and is ready for operation.

● If the LED is not steadily glowing green, contact the system administrator for the MX switch or, if you are the system administrator, see Appendix A, "MP Troubleshooting," on page 53.

MP Troubleshooting

After you insert a Cat 5 cable into an MP access point's port connector and enable PoE on the cable, observe the device's health or LINK LED to determine the status of the connection with the MX switch.

● If the LED is green and is glowing steadily, the MP has been booted successfully by the MX switch and is ready for operation.

● If the LED is not steadily glowing green, see Table 5.

(For descriptions of all the LEDs, see "Status LEDs" on page 12.)

Table 5.   Health LED States

Health or LINK LED Appearance	Diagnosis	Remedy
Not solid green	MP radio needs to be enabled.	Enable at least one of the radios. If the LED is still not solid green, try the remedy listed in this table based on the LED's appearance.
Unlit	MP access point is not receiving power.	Check the Cat 5 cable connection(s). For a direct connection to an MX switch: • Verify that Power over Ethernet (PoE) is enabled on the MX switch port connected to the MP access point. For an indirect connection through the network: • Verify that a Trapeze-approved PoE source is supplying power to the MP.

Table 5.   Health LED States (continued)

Health or LINK LED Appearance	Diagnosis	Remedy
Slowly alternating green and amber	MP access point is booting with an image received from an MX switch.	Wait a few seconds for the boot process to complete. If this LED appearance persists, enable a radio or place a radio in sentry mode.
Solid amber	MP access point is waiting to receive boot instructions and a configuration file from an MX switch.	Wait a few seconds for the boot process to begin. If the LED remains amber, try the remedies for the other health LED appearances. If the LED still remains amber, make sure the MP access point is securely connected to its PoE source and to the network or MX switch.

MP Technical Specifications

This appendix lists the technical specifications for the Trapeze Networks MP-422 access point. Table 6 lists the mechanical and compliance specifications. (For detailed compliance information, see the *Trapeze Regulatory Information* document.) Table 7, Table 8, and Table 9 list the radio specifications. Table 10 lists the MAC address allocation scheme.

(For specifications for the MX switch, see the *Trapeze Mobility Exchange Installation and Basic Configuration Guide*.)

➡ **Note.** This Listed Accessory is designed and approved to be used only with Trapeze Networks Mobility Exchange (MX) models MX-216, MX-20, MX-8, and MXR-2. (The MX-400 and MX-200 switches do not directly connect to the MP.)

➡ **Note.** The MP radios are disabled by default and can be enabled only by the system administrator using the RingMaster management application or the MX switch's command-line interface (CLI).

➡ **Note.** The radio frequency band, operating channels, and transmit power depend on the country of operation specified by the system administrator using RingMaster or the MX switch's CLI.

Table 6.   MP Mechanical and Compliance Specifications

Specification	Description
Size	Diameter: 16.76 cm (6.6 inches)
	Height: 6.1 cm (2.4 inches)
Weight	Without mounting bracket: 0.45 kg (16 ounces)
	With mounting bracket: 0.5 kg (17.5 ounces)
Operating Temperature	0° C to +50° C (32° F to 122° F)
Storage Temperature	-20° C to +70° C (-4° F to +158° F)
Humidity	10% to 95% noncondensing
Power over Ethernet (PoE)	42 VDC to 57 VDC (46 VDC nominal)
	IEEE 802.3af (MP-422, MP-372, MP-341, MP-352, and MP-52)
Status indicators	Health/MX and radio LEDs
	(For descriptions of the LEDs, see "Status LEDs" on page 12.)
Wired network ports	Two RJ-45 ports for 10/100BASE-T Ethernet and Power over Ethernet (PoE)
Standards compliance	IEEE 802.11
	IEEE 802.11a
	IEEE 802.11b
	IEEE 802.11g
	IEEE 802.3af
Safety and electromagnetic compliance	FCC Part 15, UL 60950
	IC Part 15, CSA 22.2 N0-950, RSS-139-1 and RSS-210
	ETS 300 328 (2.4 GHz) and 301 893 (5 GHz), EN 301 489-17
	R&TTE Directive 1999/5/EC
	TELEC, ARIB T66
	GBT-15941-1995, GBT-16841-1997
	LP0002

Table 6.   MP Mechanical and Compliance Specifications (continued)

Specification	Description
Encryption	Wi-Fi Protected Access (WPA) Advanced Encryption Standard (AES) 40-bit/104-bit Wired-Equivalent Privacy (WEP)
General	Power-save mode supported Transmit power control in 1 dBm increments Supports up to 250 clients per radio

Table 7.   802.11a Radio Specifications

Specification	Description
Antenna type	Integrated diversity omnidirectional External sectorized or directional (optional)
Antenna gain	Internal: 5 dBi External: • ANT-5060—14.5 dBi • ANT-5120—12.5 dBi • ANT-5180—10.8 dBi • ANT-7360—8 dBi • ANT-7360-OUT—8 dBi
Frequency band	5.15 GHz to 5.85 GHz based on country regulations
Operating channels	Based on the country of operation specified by the system administrator
Association rates	54 Mbps, 48 Mbps, 36 Mbps, 24 Mbps, 18 Mbps, 12 Mbps, 9 Mbps, and 6 Mbps, with automatic fallback
Modulation	Orthogonal frequency division multiplexing (OFDM)
Transmit power	Based on the country of operation specified by the system administrator

Table 8.   802.11b Radio Specifications

Specification	Description
Antenna type	Integrated diversity omnidirectional
	External sectorized or directional (optional)
Antenna gain	Internal: 3 dBi
	External:
	• ANT-1060—greater than 10 dBi
	• ANT-1120—7 dBi or more
	• ANT-1180—6 dBi or more
	• ANT-7360—6 dBi
	• ANT-7360-OUT—6 dBi
Frequency band	2.4 GHz to 2.4835 GHz based on country regulations
Operating channels	Based on the country of operation specified by the system administrator
Association rates	11 Mbps, 5.5 Mbps, 2 Mbps, and 1 Mbps, with automatic fallback
Modulation	Direct-sequence spread-spectrum (DSSS)
Transmit power	Based on the country of operation specified by the system administrator

Table 9.   802.11g Radio Specifications

Specification	Description
Antenna type	Integrated diversity omnidirectional
	External sectorized or directional (optional)
Antenna gain	Internal: 3 dBi
	External:
	• ANT-1060—greater than 10 dBi
	• ANT-1120—7 dBi or more
	• ANT-1180—6 dBi or more
	• ANT-7360—6 dBi
	• ANT-7360-OUT—6 dBi

Table 9.   802.11g Radio Specifications (continued)

Specification	Description
Frequency band	2.4 GHz to 2.4835 GHz based on country regulations
Operating channels	Based on the country of operation specified by the system administrator
Association rates	54 Mbps, 48 Mbps, 36 Mbps, 24 Mbps, 18 Mbps, 12 Mbps, 9 Mbps, and 6 Mbps, with automatic fallback
Modulation	Orthogonal frequency division multiplexing (OFDM)
Transmit power	Based on the country of operation specified by the system administrator

MAC Addresses

Each MP-422 is assigned a unique block of 64 MAC addresses. Each radio has 32 MAC addresses and can therefore support up to 32 SSIDs, with one MAC address assigned to each SSID as its BSSID.

An MP's MAC address block is listed on a label on the back of the MP. If the MP is already deployed and running on the network, you can display the MAC address assignments by using the **show ap status** command.

All MAC addresses on an MP are assigned based on the MP's base MAC address, as described in Table 10.

Table 10. MAC Address Allocations on MP-422

MP base MAC Address	• The MP has a base MAC address. All the other addresses are assigned based on this address.
Ethernet Port MAC Addresses	• Ethernet port 1 equals the MP base MAC address. • Ethernet port 2 equals the MP base MAC address + 1.
802.11a Radio and SSID MAC Addresses	• The 802.11a radio equals the MP base MAC address + 1. • The BSSIDs for the SSIDs configured on the 802.11a radio end in odd numbers. The first BSSID is equal to the MP's base MAC address + 1. The next BSSID is equal to the MP's base MAC address + 3, and so on.
802.11b/g Radio and SSID MAC Addresses	• The 802.11b/g radio equals the MP base MAC address. • The BSSIDs for the SSIDs configured on the 802.11b/g radio end in even numbers. The first BSSID is equal to the MP's base MAC address. The next BSSID is equal to the MP's base MAC address + 2, and so on.

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Trapeze Mobility Point Installation Guide

Trapeze Regulatory Information

This document contains important safety information. Read all the safety warnings before you begin installation.

Hardware Safety Symbols

Trapeze Networks Mobility System™ products are labeled with one or more of the following safety symbols:

Warning! High voltage.

Attention! Refer to the manual.

Warning! Class 1 Laser.

Protective ground (earth) terminal.

Frame or chassis terminal.

Trapeze Networks, Inc.
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For the most current version of this document
see **www.trapezenetworks.com**

Part Number: 730-9502-0037, Revision D

---	Direct current (DC).
∼	Alternating current (AC).
c(UL)	Complies with Underwriters Laboratories regulations in United States and Canada.
CE	Complies with European Union (CE) regulations.
CE ①	Contains a radio transmitter that complies with the Radio and Telecommunications Technical Equipment (R&TTE) Directive 1995/5/EC to an unharmonized frequency spectrum.

Safety and Advisory Notice Conventions

The following safety and advisory notices can appear in Trapeze Networks product documentation:

Warning!   This situation or condition can cause injury.

Warning!   High voltage. This situation or condition can cause injury due to electric shock.

Warning!   Radiation. This situation or condition can cause injury due to improper handling of fiber-optic equipment.

Caution!   This situation or condition can lead to data loss or damage to the product or other property.

Note.   This information is of special interest.

Regulatory Compliance Information

Trapeze Networks products cause no electromagnetic interference to other devices if installed and operated properly and without modification.

Modification Prohibition

⚠️ **Caution!** The Part 15 radio device in the access point operates on a noninterference basis with other devices operating at the same frequency. Any modification to this device not expressly approved by Trapeze Networks can void your authority to operate the device.

The manufacturer, Trapeze Networks, is not responsible for any interference caused by unauthorized modification of the devices included with this product, or the substitution or attachment of connecting cables or equipment other than supplied by Trapeze Networks.

The correction of interference caused by such unauthorized modification, substitution, or attachment is your responsibility.

Trapeze Networks and its authorized resellers or distributors are not liable for any damage or violation of government regulations that might arise from failure to comply with these guidelines.

Wiring Notice

➡️ **Note.** Other than the power cord, the wiring interconnecting these units is designed to be used intra-building only.

Federal Communications Commission Notice (United States)

This device uses, generates, and radiates radio frequency energy. The radio frequency energy produced by this device is well below the maximum exposure allowed by the Federal Communications Commission (FCC).

Operation is subject to the following conditions:

- This device may not cause harmful interference.
- 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 or Class A (as marked) 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 accepted equipment is designed and tested to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.   This equipment generates, uses, and can radiate radio frequency energy and, if not installed in accordance with the instruction manual, may cause harmful interference.

There is no guarantee that interference will not occur. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to correct the interference by one of the following measures:

⌐   Reorient or relocate the device to reorient or relocate the receiving antenna.

⌐   Increase separation between the equipment and receiver.

Federal Communication Commission Interference Statement

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 of the following measures:

● Reorient or relocate the receiving antenna.
● Increase the separation between the equipment and receiver.
● Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
● Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

If this device is going to be operated in 5.15 ~ 5.25GHz frequency range, then it is restricted in indoor environment only.

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

Canadian Department of Communications Industry Canada Notice (Canada)

This digital apparatus meets the requirements of Canadian Interference-Causing Equipment Regulation RSS-210.

Cet appareil respecte les exigences du Reglement sur le material broilleur du Canada.

This device complies with the limits of Industry Canada (IC). Operation is subject to the following

conditions:

○ This device may not cause harmful interference.

○ This device must accept any interference received, including interference that may cause undesired operation.

The device is certified to the requirements of IC RSS-139-1. The use of this device in a system operating either partially or completely outdoors may require the user to obtain a license for the system. For more information, contact your local Industry Canada office.

The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's website www.hc-sc.gc.ca/rpb

Radio Frequency Compliance Information (European Union)

The MP access point has been tested and found to comply with European Telecommunications Standard (ETS) 300 328 for 2.4-GHz equipment and ETS 301 893 for 5-GHz equipment. These standards cover wideband data transmission systems referred to in European Conference of Postal and Telecommunications Administrations (CEPT) recommendation T/R 10.01.

Voluntary Control Council for Interference by Information Technology Equipment Notice (Japan)

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Translation: This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

Regulatory Compliance Notice (Korea)

- 기기의 명칭 (모델명) : Mobility Exchange (20)
- 인증받은 자의 상호 : TRAPEZE NETWORKS, INC.
- 제조년월 :
- 제조자/제조국가 : FLEXTRONICS / 미국

- 기기의 명칭 (모델명) : Mobility Point (MP-252)
- 인증받은 자의 상호 : TRAPEZE NETWORKS, INC.
- 제조년월 :
- 제조자/제조국가 : FLEXTRONICS / 미국

- 기기의 명칭 (모델명) : Mobility Point (MP-241)
- 인증받은 자의 상호 : TRAPEZE NETWORKS, INC.
- 제조년월 :
- 제조자/제조국가 : FLEXTRONICS / 미국

사 용 자 안 내 문

이 기기는 업무용으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며 만약 잘못 판매 또는 구입하였을 때에는 가정용으로 교환하시기 바랍니다.

Lithium Battery Caution

The MX switch contains a lithium battery. If you need to replace the battery, make sure you dispose of the battery properly according to local regulations and replace the battery only with another comparable lithium battery.

⚠ **Caution!** Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

Attentie! Gevaar voor explosie als accu wordt vervangen door onjuist type. Verwijder gebruikte accu's in overeenstemming met de instructies.

Vorsicht! Wenn die Batterie durch einen falschen Typ ersetzt wird, besteht das Risiko einer Explosion. Entsorgen Sie die gebrauchten Batterien entsprechend den Anweisungen.

Attention ! Risque d'explosion si la batterie est remplacée par une batterie non conforme. Jetez les batteries usagées selon les instructions.

¡Precaución! Peligro de explosión si la bateria es reemplazada con otra de tipo incorrecto. Deseche las baterias usadas siguiendo las instrucciones.

Advarsel! Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type.

Declarations of Conformity

The following sections contain declarations of conformity.

European Union Notice

CE   All products labeled with the CE marking comply with the Electromagnetic Compliance (EMC) Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms (ENs). The equivalent international standards are listed in parentheses.

- EN 55022 (CISPR 22)—Electromagnetic Interference

- EN 55024 (IEC 61000-4-2, -3, -4, -5, -6, -8, -11)—Electromagnetic Immunity

- EN 61000-3-2 (IEC 610000-3-2)—Power Line Harmonics

- EN 61000-3-3 (IEC 610000-3-3)—Power Line Flicker

- EN 60 950 (IEC 60950)—Product Safety

CE ⓘ   Products labeled with the CE alert marking contain a radio transmitter that complies with the Radio Equipment and Telecommunications Terminal Equipment (R&TTE) Directive 1999/5/EC to an unharmonized frequency spectrum, issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms (ENs). Where applicable, the equivalent international standards are listed in parentheses.

- EN 60 950 (IEC 60950)—Product Safety

- EN 300 328—Technical Requirements for Radio Equipment

- ETS 300 826 and ETS 301 489-17—General EMC requirements for radio equipment

- ETS 301 893—Broadband Radio Access Networks (BRAN)

- HiperLAN/2

- Harmonized EN covering essential requirements of Article 3.2 of the R&TTE Directive— Point-to-multipoint digital fixed radio systems and antennas

To determine the type of transmitter, check the identification label on your product.

European Community, Switzerland, Norway, Iceland, and Liechtenstein Declarations

Table 1 lists European declarations of conformity with Radio Equipment and Telecommunications Terminal Equipment (R&TTE) Directive 1999/5/EC.

Table 1. European Declarations of Conformity with R&TTE Directive 1999/5/EC

Language	Declaration Statement
English	This equipment complies with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Deutsch	Dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprecheneden Vorgaben der Richtlinie 1999/5/EU.
Dansk	Dette udstyr er i overensstemmelse med de væsentlige krav og andre relevante bestemmelser i Directiv 1999/5/EF.
¢EllhnaV	AutoV o exoplismoV summorjwnetai me tiV ousiwdeiV apaithseiV kai tiV loipeV diataxeiV thV OdhgiaV 1999/5/EK.
Español	Este equipo cumple con los requisitos esenciales asi como con otras disposiciones de la Directive 1999/5/EC.
Français	Cet appareil est conforme aux exigencies essentialles et aux autres dispositions pertinantes de la Directive 1999/5/EC.
Íslenska	Þessi búnaður samrýmist lögboðnum kröfum og öðrum ákvæðum tilskipunar 1999/5/ESB.
Italiano	Questo apparato é conforme ai requisiti essenziali ed agli altri principi sanciti dalla Direttiva 1999/5/EC.
Nederlands	Deze apparatuur voldoet aan de belangrijkste eisen en andere voorzieningen van richtlijn 1999/5/EC.
Norsk	Dette utstyret er i samsvar med de grunnleggende krav og andre relevante bestemmelser i EU-directiv 1999/5/EC.
Português	Este equipamento satisfaz os requisitos essenciais e outras provisões da Directiva 1999/5/EC.
Suomalainen	Tämä laite täyttää direktiivin 1999/5/EY oleelliset vaatimukset ja on siinä asetettujen muidenkin ehtojen mukainen.
Svenska	Denna utrustning är i överensstämmelse med de väsentliga kraven och andra relevanta bestämmelser i Direktiv 1999/5/EC.

Translations of Warnings and Warning Conventions

Warning Conventions

⚠ **Warning!** This situation or condition can cause injury.

Waarschuwing! Deze situatie of omstandigheid kan letsel veroorzaken.

Warnung! Diese Situation oder dieser Zustand kann zu Verletzungen führen.

Avertissement ! Cette situation ou cette condition peuvent provoquer des blessures.

Aviso Esta situación o condición puede causar lesiones.

⚡ **Warning!** High voltage. This situation or condition can cause injury due to electric shock.

Waarschuwing! Hoog voltage. Deze situatie of omstandigheid kan letsel veroorzaken door elektrische schokken.

Warnung! Hochspannung. Diese Situation oder dieser Zustand kann einen Elektroschock verursachen.

Avertissement ! Haute tension. Cette situation ou cette condition peuvent provoquer des blessures dues à des décharges électriques.

Aviso Alta tensión. Esta situación o condición puede causar lesiones por descarga eléctrica.

Warning!   Radiation. This situation or condition can cause injury due to improper handling of fiber-optic equipment.

Waarschuwing!   Straling. Deze situatie of omstandigheid kan letsel veroorzaken door onjuist gebruik van glasvezelapparatuur.

Warnung!   Strahlung. Diese Situation oder dieser Zustand kann durch falschen Umgang mit glasfaserbasierten Geräten zu Verletzungen führen.

Avertissement !   Radiation. Cette situation ou cette condition peuvent provoquer des blessures dues à une manipulation inappropriée d'appareils équipés de fibres optiques.

Aviso   Radiación. Esta situación o condición puede causar lesiones debido a un manejo inadecuado del equipamiento de fibra óptica.

Qualified Service Personnel Warning

Warning!   Installation must be performed by qualified service personnel only. Read and follow all warning notices and instructions marked on the product or included in the documentation. Before installing the product, read the rest of this document.

Waarschuwing!   De installatie mag alleen worden uitgevoerd door bevoegd onderhoudspersoneel. Het is essentieel dat u kennis neemt van alle waarschuwingen en instructies aangebracht op het product zelf en/of opgenomen in de documentatie. Voordat u het product installeert, dient u dit document in zijn geheel te hebben gelezen.

Warnung!   Die Installation darf nur von einem qualifizierten Kundendienstmitarbeiter vorgenommen werden. Lesen Sie alle Warnhinweise und Anweisungen auf dem Produkt oder in der Dokumentation und befolgen Sie sie. Bevor Sie das Produkt installieren, sollten Sie dieses Dokument vollständig lesen.

Avertissement !   L'installation doit être effectuée uniquement par des techniciens qualifiés. Lisez et suivez toutes les notices d'avertissement et les instructions figurant sur le produit ou comprises dans la documentation. Lisez le reste de ce document avant d'installer ce produit.

Aviso   Sólo puede realizar la instalación personal cualificado de asistencia técnica. Lea y siga todas las notas de advertencia e instrucciones indicadas en el producto o incluidas en la documentación. Antes de instalar el producto, lea el resto de este documento.

Radio Safety Warnings

⚠️ **Warning!** Do not operate the MP access point near unshielded blasting caps or in an otherwise explosive environment unless the device has been modified for such use by qualified personnel.

Waarschuwing! Het MP-toegangspunt mag niet worden gebruikt in de nabijheid van onafgeschermde slaghoedjes of in een andere explosieve omgeving tenzij het apparaat voor een dergelijk gebruik is aangepast door bevoegd personeel.

Warnung! Die MP-Zugriffspunkte sollten nicht neben ungeschirmten Sprengkapseln betrieben oder in einer explosiven Umgebung eingesetzt werden. Für einen solchen Einsatz muss das Gerät von einem qualifizierten Kundendienstmitarbeiter entsprechend angepasst werden.

Avertissement ! Le point d'accès MP ne doit pas fonctionner près de détonateurs non blindés ou dans un autre environnement qui présent un risque d'explosion, à moins que cet appareil n'ait été adapté en vue d'une telle utilisation par du personnel qualifié.

Aviso No utilice el punto de acceso de MP cerca de detonadores no blindados ni en un entorno explosivo, a menos que haya sido modificado el dispositivo con ese fin por personal cualificado.

⚠️ **Warning!** Do not touch or move the MP access point when the antennas are transmitting or receiving.

Waarschuwing! Het MP-toegangspunt mag niet worden aangeraakt of verplaatst terwijl de antennes uitzenden of ontvangen.

Warnung! Berühren oder bewegen Sie den MP-Zugriffspunkt nicht, während die Antennen senden oder empfangen.

Avertissement ! Ne touchez ni ne déplacez le point d'accès MP lorsque les antennes sont en cours de transmission ou de réception.

Aviso No toque ni mueva el punto de acceso de MP cuando las antenas estén transmitiendo o recibiendo señales.

⚠ **Warning!** Do not hold any radio device so that the antenna is very close to or touching the face, eyes, or other exposed body part while the device's radio antenna is transmitting.

Waarschuwing! De antenne van een apparaat dat radiogolven aan het uitzenden is, mag nooit vlakbij of tegen het gezicht, de ogen of een andere onbedekt deel van het lichaam worden gehouden.

Warnung! Halten Sie die drahtlosen Geräte während der Übertragung mit der Antenne nicht nahe ans Gesicht, an die Augen oder an andere ungeschützte Körperteile und berühren Sie die Antenne nicht.

Avertissement ! Ne maintenez pas l'antenne d'un appareil radio près du visage, des yeux ou d'une autre partie du corps exposée ou en contact avec ces parties du corps, lorsqu'elle est en cours de transmission.

Aviso No coloque ningún dispositivo de radio demasiado cerca de la antena ni en contacto con la cara, los ojos u otras partes del cuerpo que estén al descubierto mientras la antena de radio del dispositivo esté transmitiendo señales.

⚠ **Warning!** Before using a wireless device in a hazardous location, consult the local codes, national codes, and safety directors of the location for usage constraints.

Waarschuwing! Voordat u een draadloos apparaat gebruikt op een gevaarlijke locatie, dient u de plaatselijke en landelijke voorschriften, en de veiligheidsvoorschriften voor de locatie te raadplegen over eventuele gebruiksbeperkingen.

Warnung! Bevor Sie drahtlose Geräte an einem gefährlichen Standort einsetzen, sollten Sie die lokalen und nationalen Regelungen und Sicherheitsbestimmungen des Standorts auf Nutzungsbeschränkungen überprüfen.

Avertissement ! Avant d'utiliser un appareil sans fil dans un endroit dangereux, consultez la réglementation locale et nationale ainsi que les responsables de la sécurité de l'endroit concerné pour obtenir des informations relatives aux conditions et aux limites d'utilisation de cet appareil.

Aviso Antes de utilizar un dispositivo inalámbrico en una ubicación peligrosa, consulte los códigos locales y nacionales y a los responsables de seguridad de la ubicación para conocer las restricciones de uso.

Lightning Warning

⚠ **Warning!**   Do not connect or disconnect cables or otherwise work with the MP access point hardware during periods of lightning activity.

Waarschuwing!   Tijdens onweer met bliksem mogen kabels nooit worden aangekoppeld aan of losgekoppeld van het MP-toegangspunt of andere werkzaamheden aan het MP-toegangspunt worden verricht.

Warnung!   Verbinden und trennen Sie während eines Gewitters keine Kabel zum MP-Zugriffspunkt und arbeiten Sie nicht damit.

Avertissement !   Ne connectez pas et ne déconnectez pas de câbles et, de manière générale, ne travaillez pas sur le matériel du point d'accès MP lorsqu'il y a un risque de foudre.

Aviso   No conecte ni desconecte cables, ni tampoco trabaje con el hardware del punto de acceso de MP durante una tormenta eléctrica.

Laser Warning

⚠ **Warning!**   The gigabit Ethernet fiber-optic interfaces use Class 1 lasers. To reduce the risk of eye injury, do not stare into the interface or otherwise direct the laser beam into your eye.

Waarschuwing!   De gigabit Ethernet glasvezel interfaces gebruiken Klasse 1 lasers. Teneinde oogletsel te voorkomen, mag u nooit rechtstreeks in de interface kijken of een laserstraal op andere wijze op uw oog richten.

Warnung!   Für die Glasfaserschnittstellen werden bei Gigabit-Ethernet Class 1-Laser verwendet. Vermeiden Sie Augenverletzungen, indem Sie nicht in die Schnittstelle schauen oder den Laserstrahl auf Ihr Auge richten.

Avertissement !   Les interfaces Gigabit Ethernet à fibre optique utilisent des lasers de classe 1. Pour réduire le risque de blessure oculaire, ne regardez pas directement l'interface et ne dirigez pas le faisceau laser vers vos yeux.

Aviso   Las interfaces de fibra óptica Gigabit Ethernet utilizan láseres de Clase 1. Para reducir el riesgo de sufrir lesiones oculares, no mire fijamente la interfaz ni dirija el rayo láser hacia los ojos.

Earth Ground Warning

⚠ **Warning!**   Earth grounding is required for an MX switch installed in a rack. If you are relying on the rack to provide ground, the rack itself must be grounded with a ground strap to the earth ground.   Metal screws attaching the switch to the rack provide ground attachment to the rack.

Waarschuwing!   Aarding aan de grond is vereist voor een MX switch geïnstalleerd in een rek. Als u het rek gebruikt als massa, dan dient het rek zelf via een aardingsstrip verbonden te zijn met grondaarding.   De metalen bouten waarmee de switch is bevestigd aan het rek zorgen voor aarding van het rek.

Warnung!   Für einen MX-Switch, der in einem Rack installiert ist, ist eine Erdung erforderlich. Wenn Sie die Erdung über das Rack vornehmen möchten, müssen Sie es über ein Masseband mit der Erde verbinden. Die Erdung zum Rack erfolgt dann über die Metallschrauben, die den Schalter mit dem Rack verbinden.

Avertissement !   La mise à la terre est requise pour un commutateur MX installé dans un châssis. Si vous utilisez le châssis comme masse, celui-ci doit être mis à la terre au moyen d'un câble de mise à la terre relié à la prise de terre.   Les vis métalliques qui attachent le commutateur au châssis assurent une mise à la masse au châssis.

Aviso   Un interruptor MX instalado en un bastidor necesita una conexión a masa. Para utilizar el bastidor como conexión a masa debe conectar a masa dicho bastidor con una tira de conexión a masa. Los tornillos metálicos que fijan el interruptor al bastidor proporcionan conexión a masa al bastidor.

Rack Installation Warnings

⚠ **Warning!** Trapeze Networks recommends that you ask someone to assist you with the remaining steps. If you accidentally drop the MX switch, you can be injured and the switch can be damaged.

Waarschuwing! Trapeze Networks adviseert dat u bij het uitvoeren van de resterende stappen iemand ter assistentie vraagt. Als u de MX switch per ongeluk laat vallen, kunt u letsel oplopen en kan de switch beschadigd raken.

Warnung! Trapeze Networks empfiehlt, dass Sie jemanden bitten, Ihnen beim Ausführen der weiteren Schritte zu helfen. Wenn Sie den MX-Switch versehentlich fallen lassen, könnten Sie dadurch verletzt werden und der Switch wird eventuell beschädigt.

Avertissement ! Trapeze Networks vous conseille de demander l'assistance d'une autre personne pour les étapes restantes. Si vous laissez tomber le commutateur MX par accident, vous pouvez vous blesser et le commutateur risque d'être endommagé.

Aviso Trapeze Networks le recomienda que pida la ayuda de alguien para realizar los pasos restantes. Si el interruptor MX se cae accidentalmente, usted puede sufrir lesiones y el interruptor puede sufrir daños.

⚠ **Warning!** To prevent the MX switch from slipping, do not release the switch until all the rack-mount screws are tight.

Waarschuwing! Laat de MX switch niet los totdat alle bevestigingsbouten goed zijn vastgedraaid om te voorkomen dat de switch uit uw handen glijdt.

Warnung! Sie vermeiden, dass der MX-Switch abrutscht, indem Sie ihn festhalten, bis alle Rack-Befestigungsschrauben angezogen sind.

Avertissement ! Pour éviter que le commutateur MX ne tombe, ne le lâchez pas tant que les vis de montage du châssis ne sont pas fixées.

Aviso Para evitar que el interruptor MX se caiga, no lo suelte hasta que todos los tornillos del bastidor estén bien apretados.

Overcurrent Warning

⚠ **Warning!** The MX switch relies on the building's installation for overcurrent protection. Ensure that a fuse or circuit breaker no larger than 120 VAC, 15A U.S. (240 VAC, 10 A international) is used on the phase conductors.

Waarschuwing! De MX switch is afhankelijk van de in het gebouw geïnstalleerde beveiliging tegen overstroom. Op de fase-aders dient een zekering of circuitonderbreker te worden gebruikt van maximaal 240 V~, 10 A.

Warnung! Der Lastschutz des MX-Switch hängt vom Gesamtlastschutz des Gebäudes ab. Sie sollten sicherstellen, dass die Phasen mit maximal 240 V~ / 10 A abgesichert sind.

Avertissement ! La protection du commutateur MX contre les surintensités dépend de l'installation électrique du bâtiment. Assurez-vous qu'un fusible ou un disjoncteur inférieur ou égal à 120 VCA, 15 A É.-U. (240 VCA, 10 A pour les autres pays) est utilisé sur les conducteurs de phase.

Aviso El interruptor MX está protegido contra las sobrecargas de corriente mediante la instalación del edificio. Asegúrese de utilizar un fusible o un disyuntor que no supere los 120 VAC, 15A en EE.UU. (240 VAC, 10 A en el resto del mundo) en los conductores de fase.