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INSTALLATION GUIDE

**IEEE 802.11a/b/g/n
Enterprise Access Point**

WAP5110

Enterprise Access Point

Installation Guide

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How to Use This Guide

This guide includes detailed information on the Access Point (AP) hardware, including network ports, power, and cabling requirements. This guide also provides general installation guidelines and recommended procedures. To deploy this AP effectively and ensure trouble-free operation, you should first read the relevant sections in this guide so that you are familiar with all its hardware components.

Who Should Read This Guide?

This guide is for network administrators and support personnel that install, operate and maintain network equipment. The guide assumes a basic working knowledge of LANs (Local Area Networks) and can be read by those that are new to network equipment, or those with more experience.

How This Guide is Organized

The organization of this guide is based on the AP's main hardware components. Each chapter includes information about a specific component with relevant specifications and installation procedures. AP overview and installation sections are also provided.

For Users New to APs — If you are new to APs, it is recommended that you first read all chapters in this guide before installing the AP.

For Experienced Users — If you are already familiar with installing and operating network APs, Chapters 1 and 2 provide you with enough information to install the AP. Other chapters can be left for reference, when needed.

The guide includes these chapters:

◆ Chapter 1 - Access Point Overview — Includes an overview of the AP with component identification, and key technical specifications.

◆ Chapter 2 - Installation Overview — Includes a list of package contents and an outline of AP installation tasks.

◆ Chapter 3 - AP Enclosure — Includes AP installaion on a wall or ceiling.

◆ Chapter 4 - Power Requirements — Includes information on providing power to the AP.

◆ Chapter 5 - Network Connections — Includes information on network interfaces and cabling specifications.

◆ Chapter 6 - AP Management — Connecting to the AP for management and information on the system status LEDs.

◆ Appendix A - Troubleshooting — Information for troubleshooting AP installation and operation.

Related Documentation This guide focuses on AP hardware and installation, it does not cover software configuration of the AP. For specific information on how to operate and use the management functions of the AP, see the following guide:

Management Guide

For all safety information and regulatory statements, see the following documents:

Quick Start Guide
Safety and Regulatory Information

Conventions The following conventions are used throughout this guide to show information:

Note: Emphasizes important information or calls your attention to related features or instructions.

Caution: Alerts you to a potential hazard that could cause loss of data, or damage the system or equipment.

Warning: Alerts you to a potential hazard that could cause personal injury.

Revision History This section summarizes the changes in each revision of this guide.

March 2013 Revision
This is the first revision of this guide.

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Tables

1 Access Point Overview

This chapter includes these sections:

◆ "Hardware Description" on page 11

◆ "Key Technical Specifications" on page 14

Hardware Description

The WAP5110 enterprise access point (AP) is built with leading-edge technology to deliver reliable high-performance connectivity for your data network.

The WAP5110 is a dual-band IEEE 802.11a/b/g/n access point that is designed to deliver high-performance wireless services for clients in an enterprise environment. Housed in a compact enclosure, the unit includes its own built-in options for mounting on a wall, or suspended ceiling T-rail. The unit can be powered through a PoE cable connection from a PoE network switch, or from its AC power adapter.

In addition, the AP offers full network management capabilities through an easy-to-use web interface, a command-line interface, and support for Simple Network Management Protocol (SNMP) tools.

Key Hardware Components The WAP5110 consists of serveral key harware components. This manual describes each specific component, or related components, together with their installation requirements and procedures in each chapter. To understand each component in detail, refer to the relevant section.

Figure 1: Front View

1	Power Socket		3	Reset Button
2	LED Indicators			
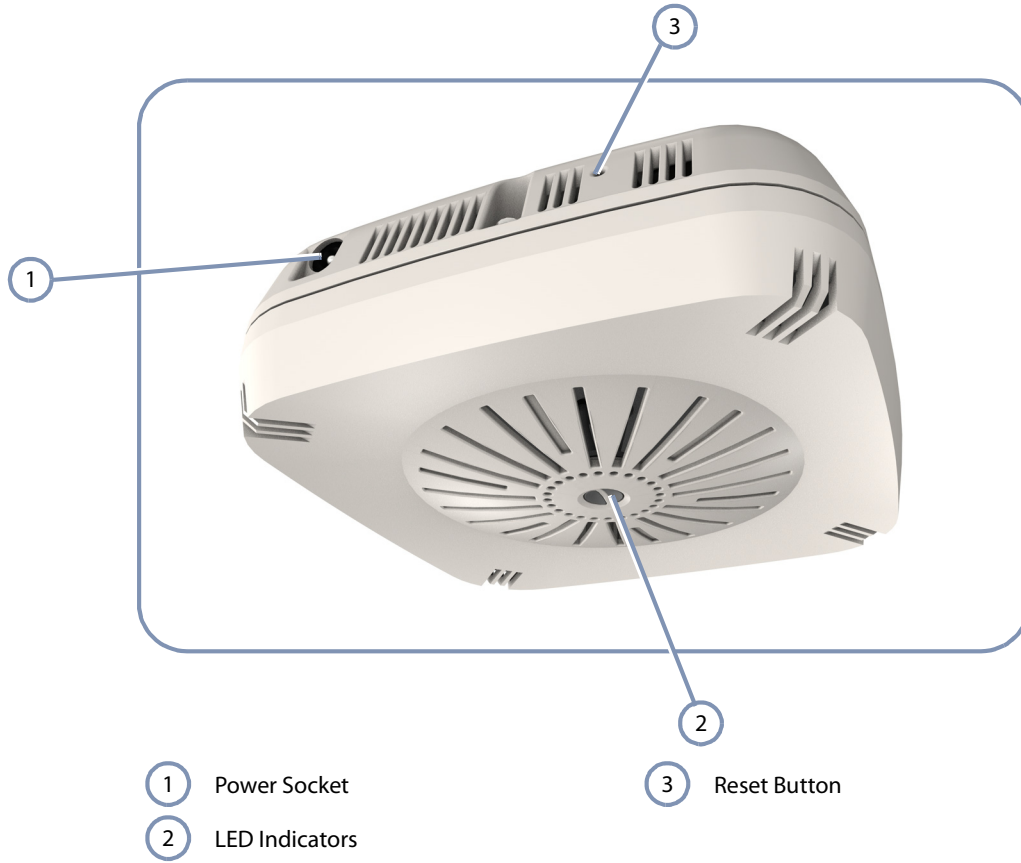
Power Socket

If the AP is not powered through a PoE connection to its RJ-45 port, the unit can be powered from its AC power adapter. See "AC Power Adapter" on page 27.

Reset Button

Can be used to return the configuration to factory default values and restart the AP's system software. For more information, see "How to Reset the AP" on page 43.

System LEDs

For information on system status LED indicators, see "Understanding the System Status LEDs" on page 40.

Internal Antennas

The unit includes 2x2 MIMO internal antennas for 2.4 GHz and 5 GHz radio operation.

Figure 2: Rear View

1	Console Port	3	T-rail Mounting Clamps
2	Wall Mounting Slots	4	RJ-45 Ethernet Port
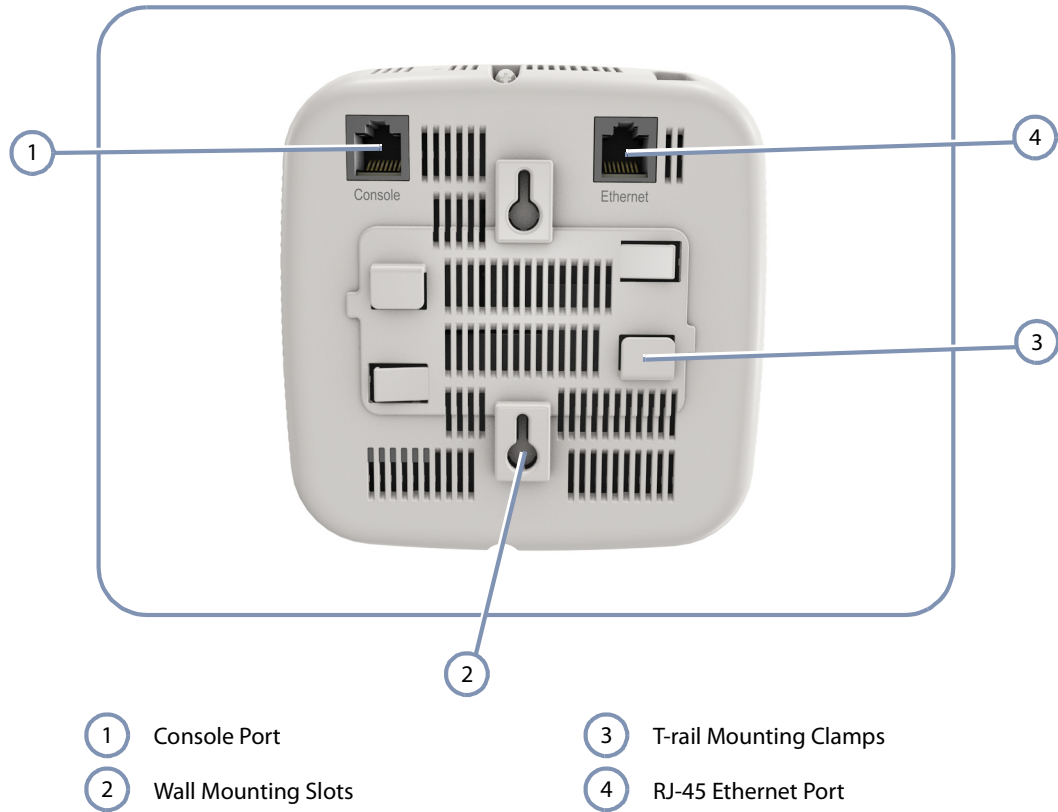
RJ-45 Ethernet Port

The RJ-45 port labeled "Ethernet" provides a 1000BASE-T data and Power-over-Ethernet (PoE) power connection to the unit. For more information, see "How to Connect to the RJ-45 Port" on page 34.

Console Port

The port labeled "Console" provides an out-of-band serial connection to a terminal or a PC running terminal emulation software. The port can be used for performing unit monitoring and configuration. For more information, see "How to Connect to the Console Port" on page 41.

Wall/Ceiling Mounting Options

The AP includes built-in mounting slots and clamps that can be used to mount the unit on a wall or a ceiling T-rail. For more information, see "How to Mount the Unit" on page 24.

Key Technical Specifications

The following table contains key system specifications for the AP.

Table 1: Key Technical Specifications

Item	Specification
Ports	One 10/100/1000 Mbps RJ-45 port
Network Interface	RJ-45 Port: ◆ 1000BASE-T, PoE (PD)
Console Port	RS-232, RJ-45 connector
2.4 GHz Radio	IEEE 802.11b/g/n
5 GHz Radio	IEEE 802.11a/n
Internal Antennas	2x2 MIMO omni antennas for 2.4 GHz and 5 GHz
Antenna Gain	3 dBi @ 2.4 GHz 4 dBi @ 5 GHz
Radio Frequencies	2400 ~ 2483.5 MHz 2412 ~ 2472 MHz 5745 ~ 5825 MHz (China) 5180 ~ 5320 MHz (ETSI) 5500 ~ 5700 MHz (ETSI)
LEDs	Power, Network
PoE Input Power	37~57 VDC
AC Power Adapter	AC Input: 100 ~ 240 VAC DC Output: 12 VDC, 2 A
Power Consumption	22.5 W maximum
Enclosure	Plenum-rated plastic (UL2043)
Weight	980 g (2.16 lbs)
Size	(W x D x H): 140 x 140 x 47.8 mm (5.51 x 5.51 x 1.88 inches)
Temperature	Operating: 0 °C to 40 °C (32 °F to 104 °F) Storage: -20 °C to 70 °C (-4 °F to 158 °F)
Humidity	Operating: 5% to 95% (non-condensing)

2   Installation Overview

This chapter includes these sections:

Package Contents

After unpacking the AP, check the contents to be sure you have received all the components.

◆ WAP5110 Enterprise Access Point

◆ AC Power adapter

◆ Console cable (RJ-45 to DB-9)

◆ Quick Start Guide

◆ Regulatory and Safety Information

◆ Documentation CD — includes this *Installation Guide* and the *Management Guide*

AP Installation Tasks

Follow these tasks to install the AP in your network. For full details on each task, go to the relevant chapter or section by clicking on the link.

Task 1   **Unpack package and check contents**

Unpack your AP and check the package contents to be sure you have received all the items.

Before installing your AP, be sure to review all the safety statements and guidelines in the *Regulatory and Safety Information* document.

Task 2   **Mount the AP**

After planning your installation, mount the unit on a wall or ceiling T-rail.

➡️   For more information, go to the chapter "AP Enclosure"

Figure 3: Installing the AP on a Wall
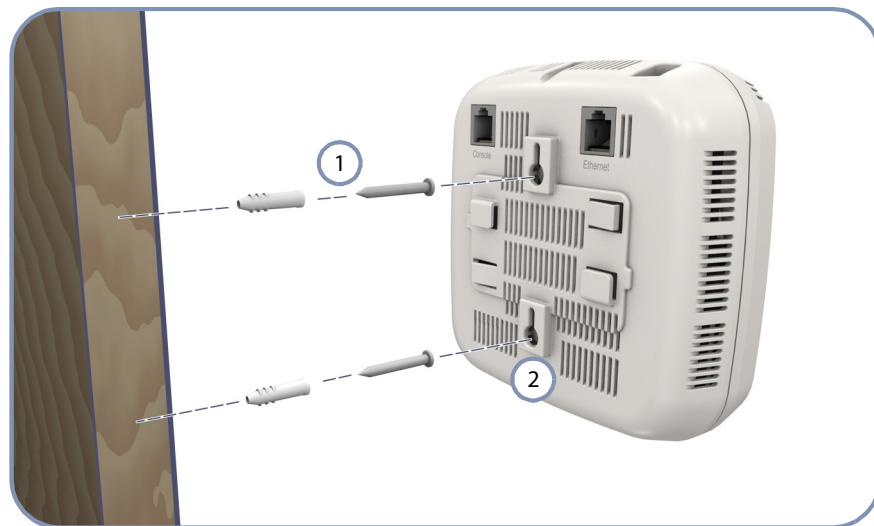
1   Set two screws in the wall 6.2 mm (2.4 in.) apart.

2   AP's wall mounting slots down onto the screws so that the unit is secure.

Figure 4: Installing the AP on a Ceiling T-rail
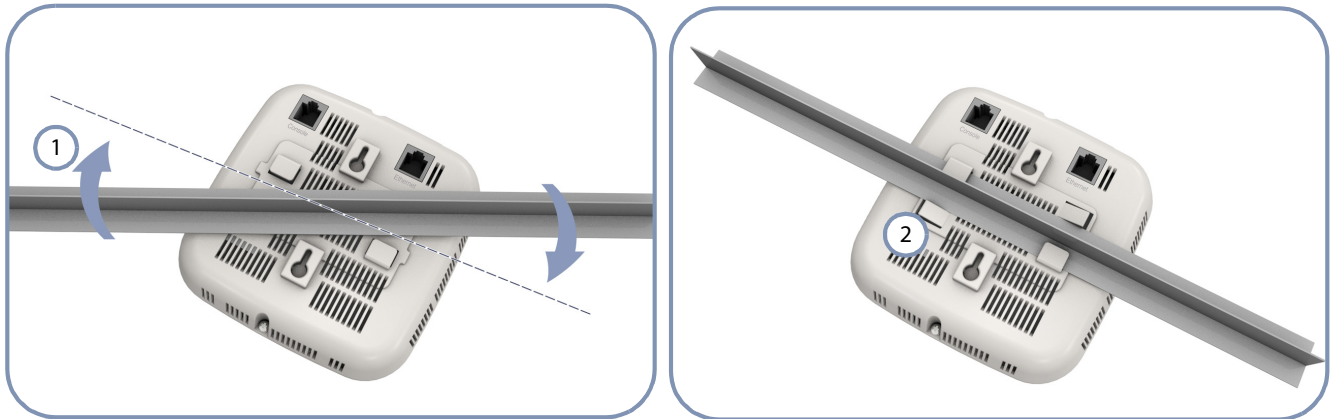
1   Position the AP's ceiling-mount clip holders on either side of the T-rail.

2   Turn the AP until the two clips lock the AP to the T-rail.

Task 3   **Connect Cables**

Connect network cable to the RJ-45 port for your network connection. The RJ-45 port connection can also provide PoE power to the unit.

➤   For more information, go to the chapter "Network Connections"

Figure 5: Making a Connection to the RJ-45 Port
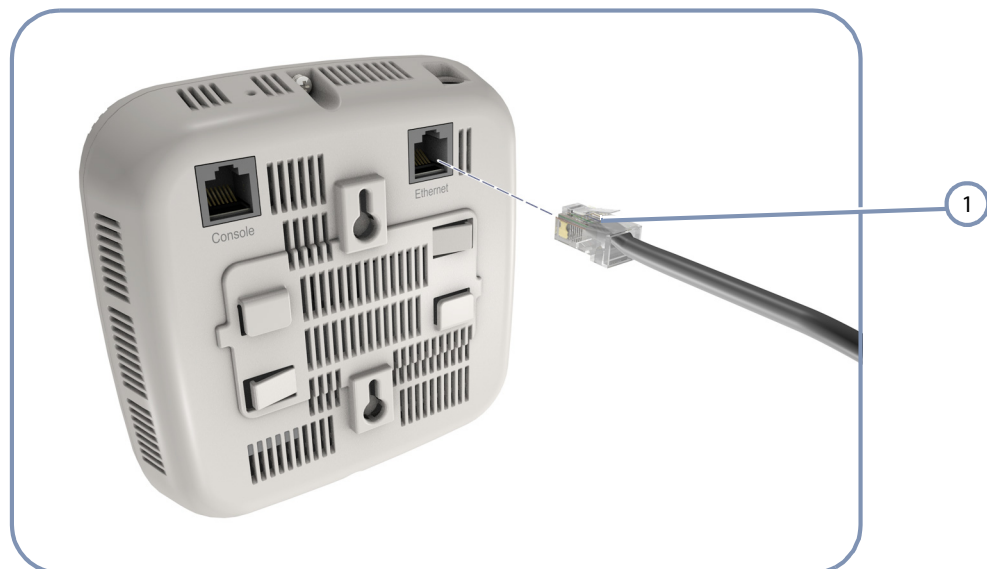
1   Connect Category 5e or better cable to the RJ-45 port.

AP Installation Tasks

Task 4   **Connect the AC Power Adapter and Power On**

Connect the AC power adapter to the AP and to an AC power source.

Alternatively, the AP can be powered by a network connection to the RJ-45 port from a PoE switch.

➤ For more information, go to the chapter "Power Requirements"

Figure 6: Connecting the AC Power Adapter

① Connect the power adapter to the power socket.

② Connect the power adapter to a nearby AC power source.

Task 5   **Verify AP Operation**

Verify basic AP operation by checking the system LEDs.

➤ For more information, go to "Understanding the System Status LEDs"

Figure 7: System LEDs

1   System Status LEDs.

Task 6   **Make Initial Configuration Changes**

At this point you may need to make a few basic configuration changes to the AP so that it is compatible with your network. It is suggested to connect to the AP console port to perform this task.

For more information, go to "How to Connect to the Console Port"

Figure 8: Console Port Connection
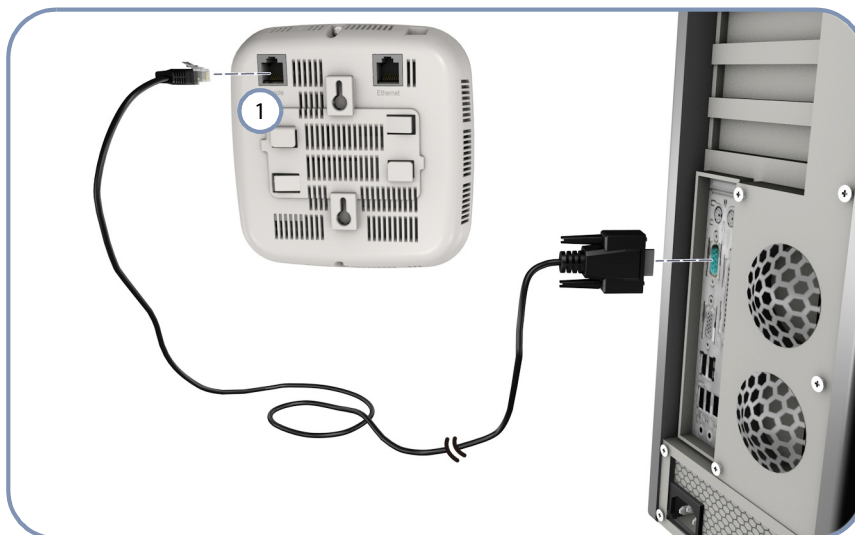
1   Console Port.

For information on AP configuration:

 Refer to the *Management Guide.*

3 AP Enclosure

The AP includes its own built-in features for mounting the unit to a wall or suspended ceiling T-rail.

Before continuing with AP installation, first review the general guidelines and requirements in this chapter.

This chapter includes these sections:

◆ "General Installation Guidelines" on page 23

◆ "How to Mount the Unit" on page 24

General Installation Guidelines

Be sure to follow the guidelines below when choosing a location.

⚠️ **Caution:** The planning and installation of the AP requires professional personnel that are trained in the installation of radio transmitting equipment. The user is responsible for compliance with local regulations concerning items such as antenna power, use of lightning arrestors, grounding, and radio mast or tower construction. Therefore, it is recommended to consult a professional contractor knowledgeable in local radio regulations prior to equipment installation.

AP Location   When planning a location for the AP, consider these guidelines:

◆ When installing for an access point service, be sure to place the unit in a location that can cover the intended service area.

◆ Mount the AP as high as possible above any obstructions in the coverage area.

◆ Avoid mounting next to or near building support columns or other obstructions that may cause reduced signal or null zones in parts of the coverage area.

◆ Mount away from any signal absorbing or reflecting structures (such as those containing metal).

◆ Be sure there are no other radio antennas within 2 m (6 ft) of the AP.

◆ Place the AP away from power and telephone lines.

Radio Interference The avoidance of radio interference is an important part of wireless network planning. Interference is caused by other radio transmissions using the same or an adjacent channel frequency. You should first scan your proposed site using a spectrum analyzer to determine if there are any strong radio signals using the 802.11a/b/g/n channel frequencies. Always use a channel frequency that is furthest away from another signal.

How to Mount the Unit

The AP can be mounted in the following ways:

◆ To a wall

◆ To a suspended ceiling T-rail

The AP includes built-in slots for wall mounting and a T-rail clamp mechanism for mounting the AP to a suspended ceiling.

Wall Mounting The AP should be mounted only to a wall or wood surface that is at least 1/2-inch plywood or its equivalent. To mount the AP on a wall, always use its wall-mounting slots and mount the unit with the power socket facing up.

Perform the following steps:

1. Mark the position of two screw holes on the wall, one above the other, that are vertically 6.2 mm (2.4 in.) apart. For concrete or brick walls, you will need to drill holes and insert wall plugs for the screws.

2. Insert the included 20-mm M4 tap screws in the holes leaving the screw heads 2-3 mm from the wall.

3. Line up the two mounting slots on the AP with the two screws in the wall, and then slide the AP down onto the screws (see Figure 9).

Figure 9: Wall Mounting the AP

1	Screws and Wall Plugs	3	Wall Mounting Slots
2	Wall Structure		
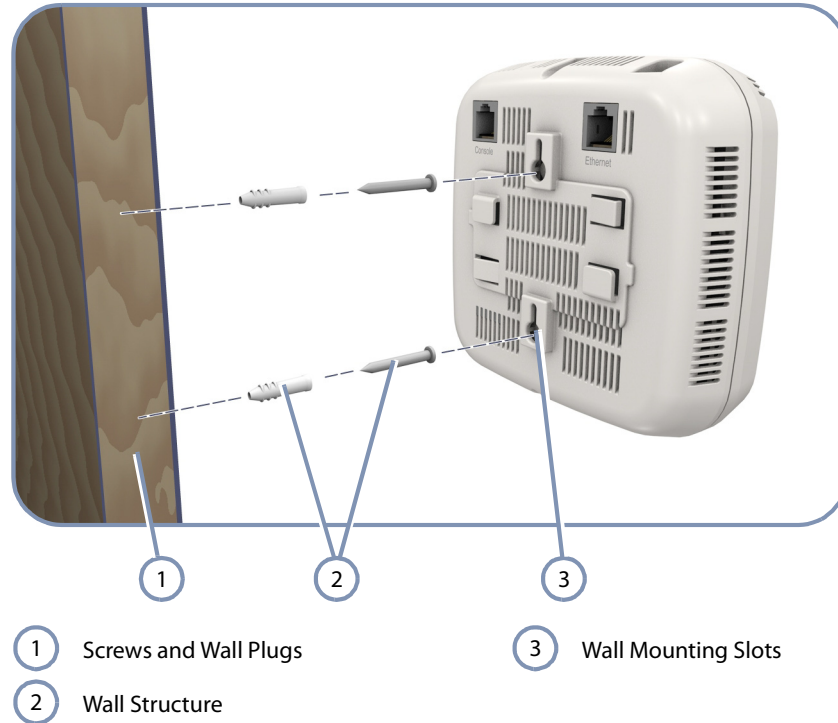
Suspended Ceiling T-Rail Mounting

To mount the AP to a suspended ceiling T-rail (Figure 10), perform the following steps:

1. Choose a location on a ceiling T-rail where the access point will be installed and position the ceiling-mount clip holders on either side of the T-rail.

2. Turn the AP until the two clips lock the T-rail into the mounting holders.

Figure 10: Attaching the AP to a Suspended Ceiling

1	Ceiling T-rail	3	Mounting Clip
2	Mounting Holder		

4
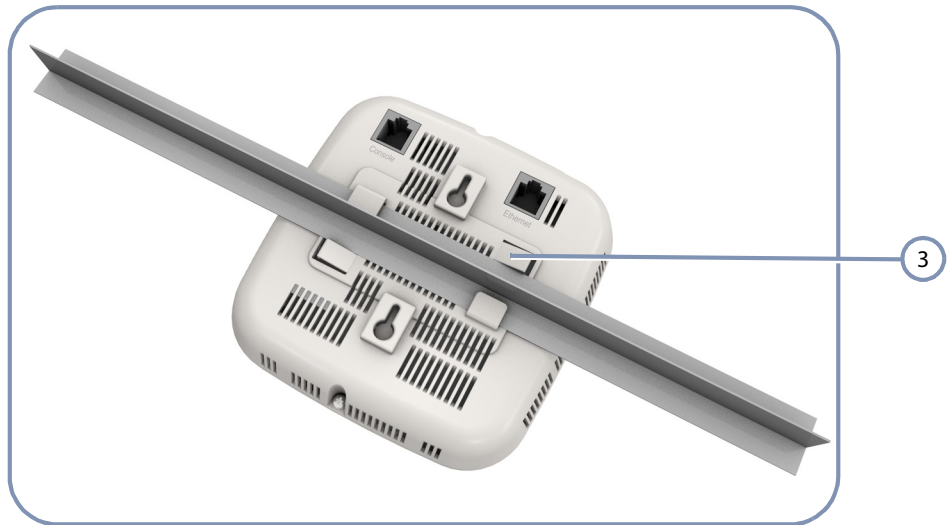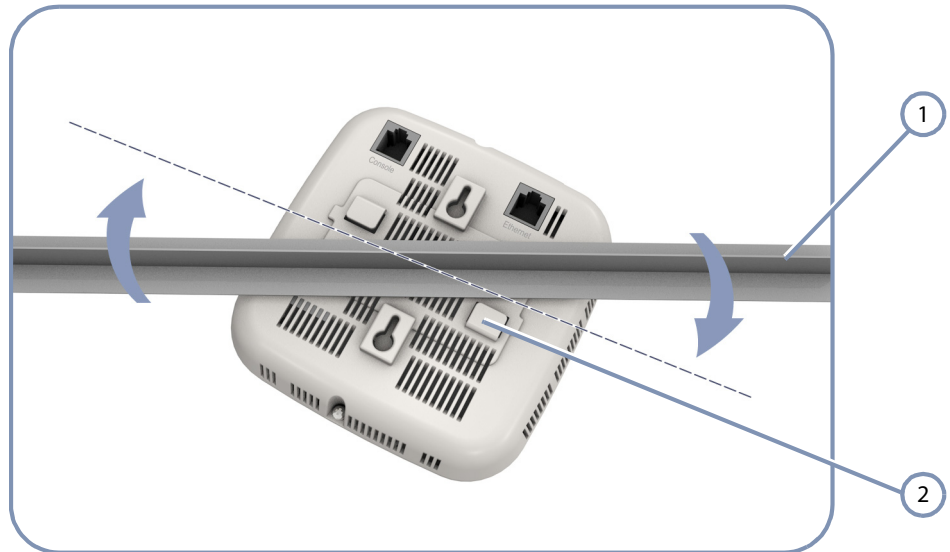
Power Requirements

This chapter focuses on how to power-on the AP. The AP can be powered through a PoE connection or by using the included AC power adapter.

This chapter includes these sections:

◆

◆

◆

AC Power Adapter

An AC power adapter is included in the AP package and can be used to power the AP.

The AP does not have a power switch. It is powered on when it is connected to the AC power adapter, and the power adapter is connected to an AC power source. The AC power adapter automatically adjusts to any AC voltage between 100-240 volts at 50 or 60 Hz. No voltage range settings are required.

Table 2: AC Power Adapter Specifications

Item	Description
Type	Wall plug
AC Input	100~240 VAC, 50-60 Hz, 1.0 A
DC Output	12 VDC, 2 A
Output Power	25 W maximum

How to Use the AC Power Adapter

To power on the AP using its AC power adapter, perform the following steps:

⚠️ **Caution:** Use ONLY the AC power adapter supplied with this AP, otherwise the product may be damaged.

ℹ️ **Note:** If the AP is connected to both a PoE source device and an AC power source, the AC power connection will be disabled.

1. Connect the AC power adapter to the AP and then to an AC power outlet.

2. Verify that the Power indicator turns on, and that the other indicators start functioning as described under "Understanding the System Status LEDs" on page 40.

   If the Power LED does not turn on green, the self test has not completed correctly. Refer to "Troubleshooting" on page 44.

Figure 11: Connecting the AC Power Adapter

①	AP Power Socket	③	AC Power Source
②	AC Power Adapter		
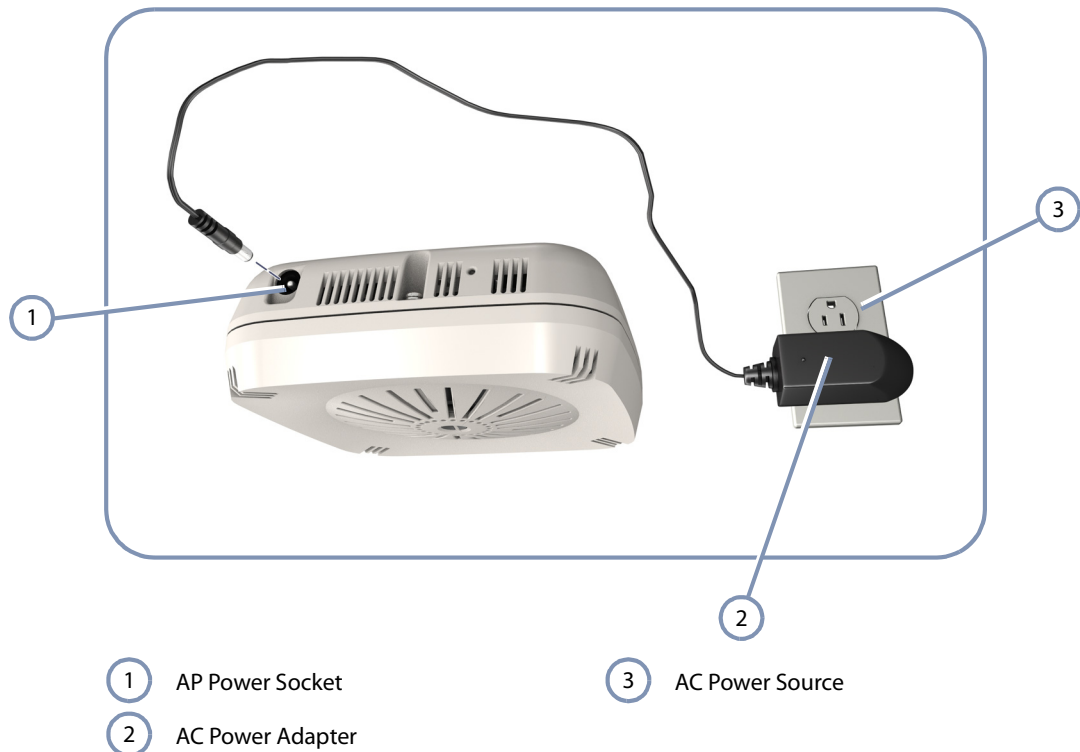
How to Power the AP Using PoE

The AP can derive its operating power directly from the RJ-45 port when connected to a network device that provides IEEE 802.3af Power over Ethernet (PoE) or IEEE 802.3at PoE+.

To power on the AP using a PoE connection, perform the following steps:

1. Connect the RJ-45 port on the AP to a 10/100/1000 Mbps Ethernet network device, such as a switch, that can supply PoE power.

    For more information on network connections, see "How to Connect to the RJ-45 Port" on page 34.

ⓘ **Note:** The RJ-45 port on the AP supports automatic MDI/MDI-X operation, so you can use straight-through cables for all network connections.

2. Verify that the Power indicator turns on, and that the other indicators start functioning as described under "Understanding the System Status LEDs" on page 40.

    Assuming the connected network device is also powered on, the LAN link LED should turn on indicating a valid network connection.

    If the Power LED does not turn on green, the self test has not completed correctly. Refer to "Troubleshooting" on page 44.

Figure 12: Connecting to PoE Power
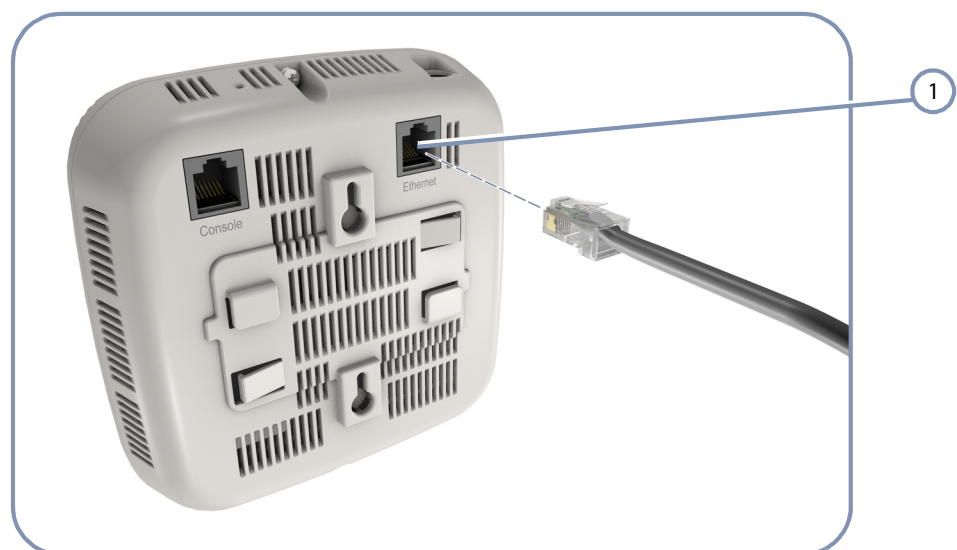
①   RJ-45 PoE Port

5

Network Connections

This chapter focuses on making connections to the AP's network interfaces, including details on network cable specifications.

The AP features one 1000BASE-T RJ-45 port, as well as wireless interfaces. The sections that follow describe the network interfaces.

This chapter includes these sections:

◆ "Cable Labeling and Connection Records" on page 32

◆ "Understanding the Network Status LED" on page 33

◆ "How to Connect to Radio Interfaces" on page 33

◆ "How to Connect to the RJ-45 Port" on page 34

Cable Labeling and Connection Records

When planning a network installation, it is essential to label the opposing ends of cables and to record where each cable is connected. Doing so will enable you to easily locate inter-connected devices, isolate faults and change your topology without need for unnecessary time consumption.

To best manage the physical implementations of your network, follow these guidelines:

◆ Clearly label the opposing ends of each cable.

◆ Using your building's floor plans, draw a map of the location of all network-connected equipment. For each piece of equipment, identify the devices to which it is connected.

◆ Note the length of each cable and the maximum cable length supported by the switch ports.

◆ For ease of understanding, use a location-based key when assigning prefixes to your cable labeling.

◆ Use sequential numbers for cables that originate from the same equipment.

◆ Differentiate between racks by naming accordingly.

◆ Label each separate piece of equipment.

◆ Display a copy of your equipment map, including keys to all abbreviations at each equipment rack.

Understanding the Network Status LED

The AP includes an LED indicator to indicate network link status and activity. The LED is shown below and is described in the following table.

Figure 13: Network Status LED

1   Network Link/Activity

Table 3: Network Status LED

LED	Condition	Status
Network Link/ Activity	On Amber	The 2.4 GHz, 5 GHz, or LAN interface has a valid link.
	Flashing Amber	Flashing indicates network activity.
	Off	The device is powered off.

How to Connect to Radio Interfaces

The 802.11b/g standard operates in the 2.4 GHz band and the 802.11a standard in the 5 GHz band. The 802.11n standard operates in both the 2.4 GHz and 5 GHz bands. Note that 802.11n is backward compatible with 802.11a, b, and g.

Once the AP is installed and powered on, wireless clients can connect to the 802.11b/g/n radio interface using the 2.4 GHz band and to the 802.11a/n radio interface using the 5 GHz band. The radio and authentication settings for wireless clients can be configured through management interfaces. For more information, refer to the *Management Guide*.

How to Connect to the RJ-45 Port

The connection between the AP's RJ-45 port and a LAN switch requires an unshielded twisted-pair (UTP) cable with RJ-45 connectors at both ends. Use Category 5, 5e or 6 cable for 1000BASE-T connections, Category 5 or better for 100BASE-TX connections, and Category 3 or better for 10BASE-T connections. The length of the cable must be less than 100m (328 ft).

The RJ-45 port on the AP supports automatic MDI/MDI-X pinout configuration, so you can use standard straight-through twisted-pair cables to connect to any other network device (PCs, servers, switches, routers, or hubs).

Table 4: Maximum Twisted-Pair Copper Cable Lengths

| Cable Type	Maximum Cable Length	Connector
1000BASE-T		
Category 5, 5e, or 6 100-ohm UTP or STP	100 m (328 ft)	RJ-45
100BASE-TX		
Category 5 or better 100-ohm UTP or STP	100 m (328 ft)	RJ-45
10BASE-T		
Category 3 or better 100-ohm UTP	100 m (328 ft)	RJ-45

Copper Cabling Guidelines To ensure proper operation when installing the AP into a network, make sure that the current cables are suitable for 10BASE-T, 100BASE-TX or 1000BASE-T operation. Check the following criteria against the current installation of your network:

◆ Cable type: Unshielded twisted pair (UTP) or shielded twisted pair (STP) cables with RJ-45 connectors; Category 3 or better for 10BASE-T, Category 5 or better for 100BASE-TX, and Category 5, 5e or 6 for 1000BASE-T.

◆ Protection from radio frequency interference emissions

◆ Electrical surge suppression

◆ Separation of electrical wires (switch related or other) and electromagnetic fields from data based network wiring

◆ Safe connections with no damaged cables, connectors or shields

10/100BASE-TX Pin Assignments Most 100BASE-TX RJ-45 ports support automatic MDI/MDI-X operation, so you can use straight-through or crossover cables for all network connections to PCs, switches, or hubs. In straight-through cable, pins 1, 2, 3, and 6, at one end of the cable, are connected straight through to pins 1, 2, 3, and 6 at the other end of the cable.

Figure 14: RJ-45 Connector
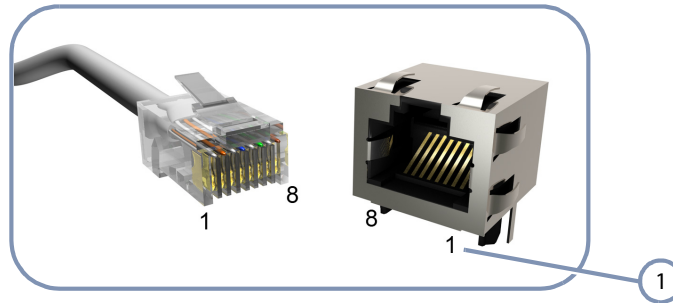
① RJ-45 Pin Numbers

Table 5: 10/100BASE-TX MDI and MDI-X Port Pinouts

PIN	MDI Signal Name[a]	MDI-X Signal Name
1	Transmit Data plus (TD+) -52V power (Negative V_{port})	Receive Data plus (RD+) GND (Positive V_{port})
2	Transmit Data minus (TD-) -52V power (Negative V_{port})	Receive Data minus (RD-) GND (Positive V_{port})
3	Receive Data plus (RD+) GND (Positive V_{port})	Transmit Data plus (TD+) -52V power (Negative V_{port})
4	-52V power (Negative V_{port})	GND (Positive V_{port})
5	-52V power (Negative V_{port})	GND (Positive V_{port})
6	Receive Data minus (RD-) GND (Positive V_{port})	Transmit Data minus (TD-) -52V power (Negative V_{port})
7	GND (Positive V_{port})	-52V power (Negative V_{port})
8	GND (Positive V_{port})	-52V power (Negative V_{port})

a.   The "+" and "-" signs represent the polarity of the wires that make up each wire pair.

1000BASE-T Pin Assignments All 1000BASE-T ports support automatic MDI/MDI-X operation, so you can use straight-through cables for all network connections to PCs or servers, switches or hubs.

The table below shows the 1000BASE-T MDI and MDI-X port pinouts. These ports require that all four pairs of wires be connected. Note that for 1000BASE-T operation, all four pairs of wires are used for both transmit and receive.

Table 6: 1000BASE-T MDI and MDI-X Port Pinouts

Pin	MDI Signal Name	MDI-X Signal Name
1	Bi-directional Pair A Plus (BI_DA+) -52V power (Negative V_{port})	Bi-directional Pair B Plus (BI_DB+) GND (Positive V_{port})
2	Bi-directional Pair A Minus (BI_DA-) -52V power (Negative V_{port})	Bi-directional Pair B Minus (BI_DB-) GND (Positive V_{port})
3	Bi-directional Pair B Plus (BI_DB+) GND (Positive V_{port})	Bi-directional Pair A Plus (BI_DA+) -52V power (Negative V_{port})
4	Bi-directional Pair C Plus (BI_DC+) -52V power (Negative V_{port})	Bi-directional Pair D Plus (BI_DD+) GND (Positive V_{port})
5	Bi-directional Pair C Minus (BI_DC-) -52V power (Negative V_{port})	Bi-directional Pair D Minus (BI_DD-) GND (Positive V_{port})
6	Bi-directional Pair B Minus (BI_DB-) GND (Positive V_{port})	Bi-directional Pair A Minus (BI_DA-) -52V power (Negative V_{port})
7	Bi-directional Pair D Plus (BI_DD+) GND (Positive V_{port})	Bi-directional Pair C Plus (BI_DC+) -52V power (Negative V_{port})
8	Bi-directional Pair D Minus (BI_DD-) GND (Positive V_{port})	Bi-directional Pair C Minus (BI_DC-) -52V power (Negative V_{port})

1000BASE-T Cable Requirements

All Category 5 UTP cables that are used for 100BASE-TX connections should also work for 1000BASE-T, providing that all four wire pairs are connected. However, it is recommended that for all critical connections, or any new cable installations, Category 5e (enhanced Category 5) or Category 6 cable should be used. The Category 5e and 6 specifications include test parameters that are only recommendations for Category 5. Therefore, the first step in preparing existing Category 5 cabling for running 1000BASE-T is a simple test of the cable installation to be sure that it complies with the IEEE 802.3-2008 standards.
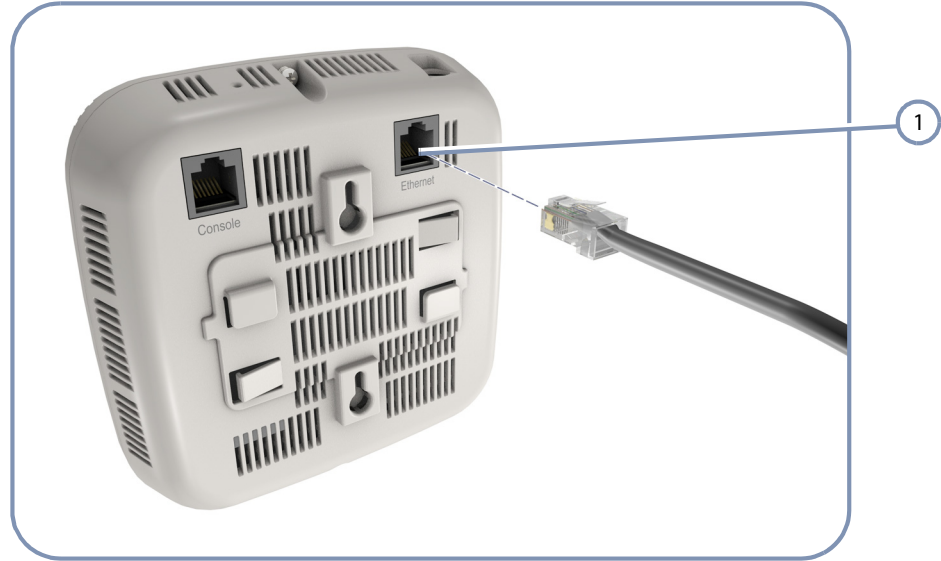
Connection Procedure Follow these steps to connect Ethernet copper cable to the AP's RJ-45 twisted-pair copper port:

Note: Connecting Ethernet cable to the AP and to a PoE LAN switch powers on the unit.

1. Attach one end of a twisted-pair cable segment to the network device's RJ-45 port.

Figure 15: Making Twisted-Pair Connections

(1)   RJ-45 Ethernet Port

2. Attach the other end to the RJ-45 port on the AP.

Make sure the twisted pair cable does not exceed 100 meters (328 ft) in length.

3. As the connection is made, check that the attached network device port LED turns on to indicate that the connection is valid.

6 AP Management

The AP includes a management agent that allows you to configure or monitor the AP using its embedded management software. To manage the AP, you can make a direct connection to the console port (out-of-band), or you can manage it through a network connection (in-band) using Telnet, Secure Shell (SSH), a web browser, or SNMP-based network management software.

For a detailed description of the AP's software features, refer to the *Management Guide*.

This chapter includes these sections:

◆ "Understanding the System Status LEDs" on page 40

◆ "How to Connect to the Console Port" on page 41

◆ "How to Reset the AP" on page 43

Understanding the System Status LEDs

The AP includes LED indicators that indicate system and port status. The LEDs are shown below and are described in the following table.

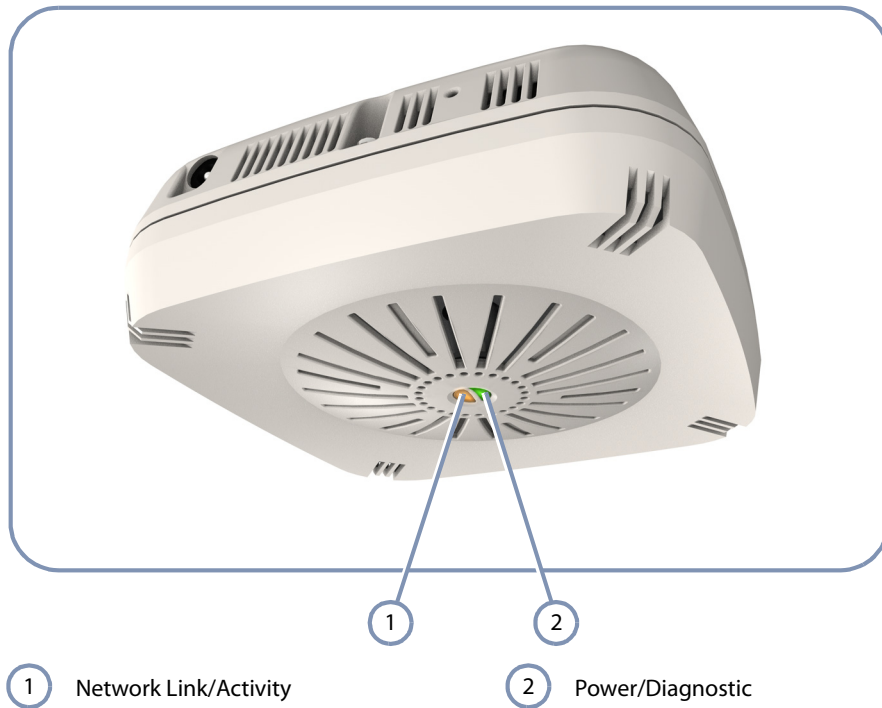**Figure 16: System Status LEDs**

| 1 | Network Link/Activity | 2 | Power/Diagnostic |

Table 7: System Status LEDs

| LED	Condition	Status
Power/Diagnostic	On Green	The AP is receiving power and operating normally.
	Flashing Green	Initial system self-test in progress.
	Off	The AP is not receiving power.
Network Link/Activity	On Amber	The 2.4 GHz, 5 GHz, or LAN interface has a valid link.
	Flashing Amber	Flashing indicates network activity.
	Off	The AP is not receiving power.

How to Connect to the Console Port

The RJ-45 Console port on the AP is used to connect to the AP for out-of-band console configuration. The console device can be a PC or workstation running a VT-100 terminal emulator, or a VT-100 terminal. A console cable is supplied with the AP for connecting to a PC's RS-232 serial DB-9 DTE (COM) port.

Note: To connect to notebooks or other PCs that do not have a DB-9 COM port, use a USB to male DB-9 adapter cable (not included with the AP).

Figure 17: Console Port Pinout
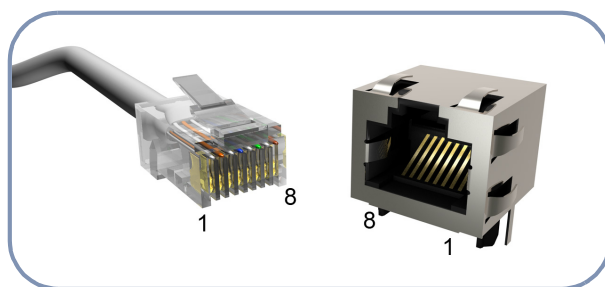
The following table describes the pin assignments used in the console cable.

Table 8: Console Cable Wiring

AP's 8-Pin RJ-45 Console Port	Null Modem	PC's 9-Pin DTE Port
6 RXD (receive data)	<---------------------	3 TXD (transmit data)
3 TXD (transmit data)	--------------------->	2 RXD (receive data)
5 SGND (signal ground)	-----------------------	5 SGND (signal ground)

No other pins are used.

The serial port's configuration requirements are as follows:

◆ Default Baud rate—115,200 bps

◆ Character Size—8 Characters

◆ Parity—None

◆ Stop bit—One

◆ Data bits—8

◆ Flow control—none

Follow these steps to connect to the Console port:

1. Attach one end of the included console cable to a DB-9 COM port connector on the management PC. Use a USB to male DB-9 adapter cable (not included) if needed.

2. Attach the other end of the console cable to the RJ-45 Console port on the AP.

Figure 18: Console Port Connection
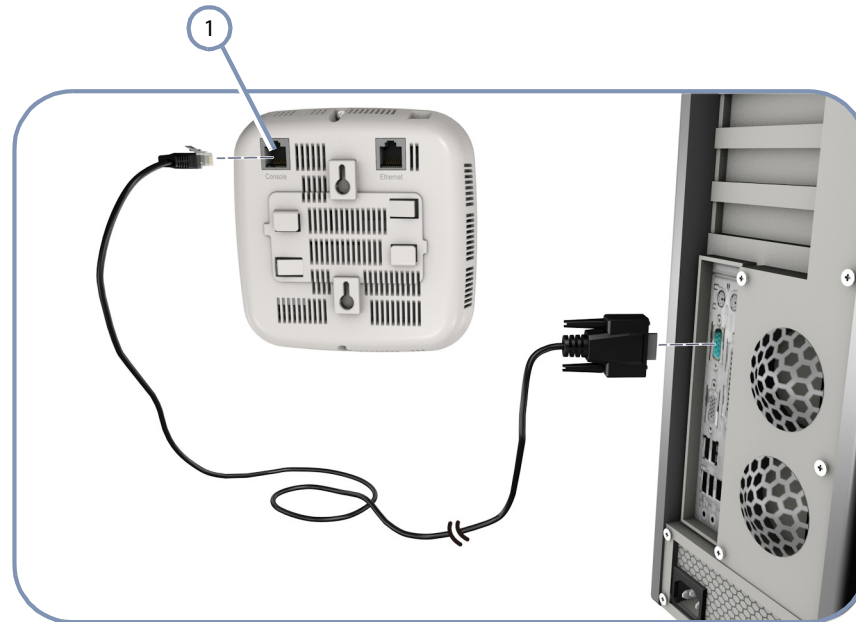
①   Console Port

3. Configure the PC's COM port required settings using VT-100 terminal emulator software (such as HyperTerminal) running on the management PC.

4. When you have completed your console session, remove the console cable from the AP.

For a detailed description of connecting to the console and using the AP's command-line interface (CLI), refer to the *Management Guide*.

How to Reset the AP

The Reset button on the AP can be used to restart the device and set the configuration back to factory default values.

Use a sharp object, such as the tip of a pen, to depress the Reset button. One push of the button restarts the system software using default values.

Figure 19: Reset Button

1   Reset Button

A Troubleshooting

Diagnosing LED Indicators

Table 9: Troubleshooting Chart

Symptom	Action
Power LED is Off	◆ Check connections between the power adapter and the wall outlet. ◆ Check the LAN connection if using PoE power. ◆ Contact your dealer for assistance.
Power LED is Flashing Green	◆ Power cycle the AP to try and clear the condition. ◆ If the condition does not clear, contact your dealer for assistance.
Network LED is Off	◆ Verify that the AP and attached device are powered on. ◆ Using management interfaces, verify that the 2.4 GHz and 5 GHz radios are enabled. ◆ Be sure the network cable is plugged into both the AP and corresponding device. ◆ Verify that the proper cable type is used and its length does not exceed specified limits. ◆ Check the cable connections for possible defects. Replace the defective cable if necessary.

System Self-Diagnostic Test Failure

If the Power LED indicates a failure of the system power-on-self-test (POST), you can use a console connection to view the POST results. The POST results may indicate a failed component or help troubleshoot the problem. For more information on connecting to the console port and using the CLI, refer to the *Management Guide*.

Note a POST failure normally indicates a serious hardware fault that cannot be rectified or worked around. If you encounter a POST failure, you should contact your dealer for assistance.

Power Problems

If the power indicator does not turn on when the power adapter is plugged in, you may have a problem with the power outlet, power cord, or power adapter. However, if the unit powers off after running for a while, check for loose power

connections, power losses or surges at the power outlet. If you still cannot isolate the problem, the power adapter may be defective.

Installation

Verify that all system components have been properly installed. If one or more components appear to be malfunctioning (such as the power cord or network cabling), test them in an alternate environment where you are sure that all the other components are functioning properly.

Wireless Connection Problems

If wireless clients cannot access the network, check the following items before you contact your local dealer for assistance:

◆ Be sure the access point and wireless clients are configured with the same Service Set ID (SSID).

◆ Ensure that wireless clients are properly configured with the appropriate authentication or encryption keys.

◆ If authentication is being performed through a RADIUS server, ensure that the clients are properly configured on the RADIUS server.

◆ If authentication is being performed through IEEE 802.1X, be sure the wireless users have installed and properly configured 802.1X client software.

In-Band Access

If the AP cannot be configured using Telnet, a web browser, or SNMP software:

◆ Be sure to have configured the AP with a valid IP address, subnet mask and default gateway.

◆ Check that you have a valid network connection to the AP and that the Ethernet port or the wireless interface that you are using has not been disabled.

◆ If you are connecting to the AP through the wired Ethernet interface, check the network cabling between the management station and the AP. If you are connecting to the AP from a wireless client, ensure that you have a valid connection to the AP.

◆ If you cannot connect using Telnet, you may have exceeded the maximum number of concurrent Telnet sessions permitted (i.e, four sessions). Try connecting again at a later time.

Out-of-Band Access

If you cannot access the on-board configuration program via a serial port connection:

◆ Be sure you have set the terminal emulator program to VT100 compatible, 8 data bits, 1 stop bit, no parity and 115,200 Baud Rate.

◆ Check that the null-modem serial cable conforms to the pin-out connections provided in "How to Connect to the Console Port" on page 41.

Reset the Access Point

If all other recovery measure fail, and the AP is still not functioning properly, take any of these steps to reset the AP's hardware:

◆ Enter the "reload" command from the console interface.

◆ Restart the AP from the web interface.

◆ Perform a power reset.

◆ Press the Reset button to restore the factory default values.

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