IdentiFi™ Wireless

WS-AP3825i & WS-AP3825e Installation Guide

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About This Guide

The guide describes how to mount and connect cables to the Extreme Networks Wireless AP3825 access point. In addition, this guide provides information on the product certifications and national approvals for the WS-AP3825 access point.

NOTE

This guide does not provide information on configuration of the access points. For information on how to configure the access points, see the Extreme Networks Wireless Convergence Software User Guide.

Who Should Use This Guide

Electrical Hazard: Only qualified personnel should install or service this unit.

Riesgo Electrico: Nada mas personal capacitado debe de instalar o darle servicio a esta unida.

Elektrischer Gefahrenhinweis: Installationen oder Servicearbeiten sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

How to Use This Guide

Read through this guide completely to familiarize yourself with its contents and to gain an understanding of the features and capabilities of the WS-AP3825 access point. A general working knowledge of data communications networks is helpful when setting up this product.

This preface provides an overview of this guide, defines the conventions used in this document, and instructs how to obtain technical support from Extreme Networks. To locate information about various subjects in this guide, refer to the following table.

For...	Refer to...
An overview of the WS-AP3825 features.	Chapter 1, “Introduction”
Instructions to mount the WS-AP3825, connect cables, and connect power. Instructions are also included to mount and connect the optional Power Supply.	Chapter 6, “Installation”
Specifications, environmental requirements, and physical properties of the WS-AP3825 and optional Power Supply.	Appendix 5, Specifications
Regulatory certifications and national approvals.	Appendix 6, Regulatory Information

Related Documents

The following can be obtained from our documentation site (http://documentation.extremenetworks.com/): :

- *Extreme Networks Wireless Convergence Software User Guide*

Typographical Conventions

The following typographical conventions and icons are used in this document.

orange type	Indicates a hypertext link. When reading this document online, click the text in blue to go to the referenced figure, table, or section.
Lowercase **x**	Indicates the general use of an alphanumeric character (for example, AP37xx, the two x's indicate a combination of numbers or letters).
	**Note:** Calls the reader's attention to any item of information that may be of special importance.
	**Caution:** Contains information essential to avoid damage to the equipment. Precaución: Contiene información esencial para prevenir dañar el equipo. Achtung: Verweißt auf wichtige Informationen zum Schutz gegen Beschädigungen.
	**Warning:** Warns against an action that could result in personal injury or death. Advertencia: Advierte contra una acción que pudiera resultar en lesión corporal o la muerte. Warnhinweis: Warnung vor Handlungen, die zu Verletzung von Personen oder gar Todesfällen führen können!
	**Electrical Hazard:** Warns against an action that could result in personal injury or death. Riesgo Electrico: Advierte contra una acción que pudiera resultar en lesión corporal o la muerte debido a un riesgo eléctrico. Elektrischer Gefahrenhinweis: Warnung vor sämtlichen Handlungen, die zu Verletzung von Personen oder Todesfällen – hervorgerufen durch elektrische Spannung – führen können!

Getting Help

For additional support related to the WS-AP3825 or this document, contact extremenetworks using one of the following methods:

Web	www.extremenetworks.com/support/
Phone	1-800-872-8440 (toll-free in U.S. and Canada) or 1-603-952-5000 For the Extreme Networks Support toll-free number in your country: www.extremenetworks.com/support/

Before contacting extremenetworks for technical support, have the following data ready:

- Your extremenetworks service contract number
- A description of the failure
- A description of any action(s) already taken to resolve the problem (for example, changing mode switches or rebooting the unit)
- The serial and revision numbers of all involved extremenetworks products in the network
- A description of your network environment (such as layout, cable type, other relevant environmental information)
- Network load and frame size at the time of trouble (if known)
- The device history (for example, if you have returned the device before, or if this is a recurring problem)
- Any previous Return Material Authorization (RMA) numbers

1 Introduction

This installation guide provides an overview and installation instructions for the Extreme Networks Wireless Access Points WS-AP3825i and WS-AP3825e.

About the WS-AP3825i and WS-AP3825e

The WS-AP3825i and WS-AP3825e access points are a cost-effective solution for extending your wireless LAN around indoor locations. They interoperate fully with the Extreme Networks wireless LAN, including support for Extreme Networks wireless VoWLAN, branch office mode, availability and mobility features.

The WS-AP3825i and WS-AP3825e are nearly identical in appearance and have the following features in common:

- Both operate in 802.11ac and 802.11n mode and also support 802.11a/802.11g and 802.11b standard legacy devices.
- Both support two MIMO 3x3 (up to three 802.11ac spatial streams).
- They provide two single band radios for dual-band, concurrent operation, optimized for indoor antenna coverage:
  - 5 GHz (Radio 1) in any of the following modes: IEEE802.11ac, a/b/g and/or n
  - 2.4 GHz (Radio 2) in any of the following modes: IEEE802.11ac, a/b/g and/or n
- They are enclosed in a rectangular, compact case.
- Both models include two mounting brackets, and screws/anchors, for mounting them to walls and drop/suspended ceilings.
- They provide 40MHz Bandwidth at 2.4/5 GHz operation (Channel Bonding).
- They can be powered directly through the LAN using Power over Ethernet (PoE), or by an external 110/240V AC/DC adaptor.
- Both have dual Ethernet (LAN) ports for fault-tolerant network connection and failover.

NOTE

The WS-AP3825 comes in two models: the WS-AP3825i has 6 internal single-band antennas while the WS-AP3825e has 6 external RSMA connectors for connecting external antennas. Within this document, any reference to WS-AP3825 applies to both models.

WS-AP3825 Overview

The WS-AP3825 access point is available in two models:

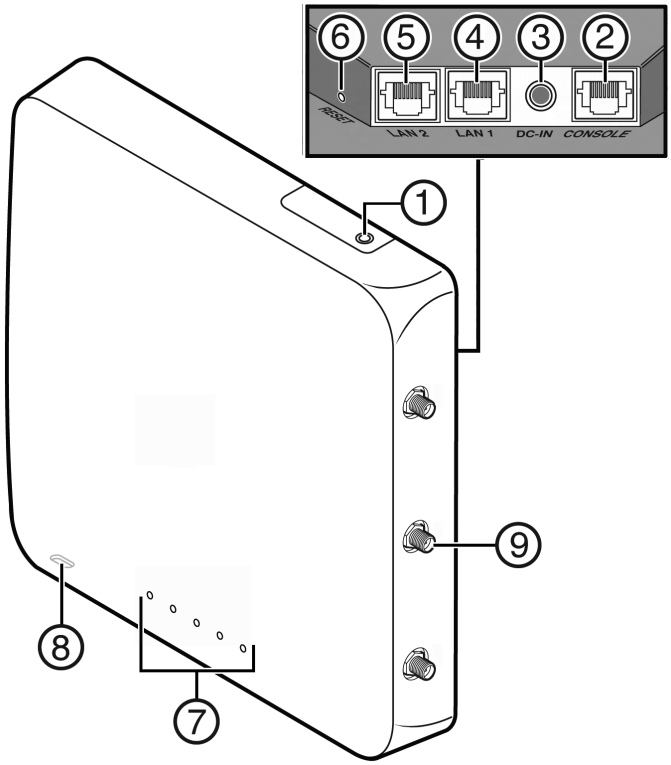
- WS-AP3825i contains six internal single-band antennas
- WS-AP3825e contains six external RSMA connectors for optional external antennas, for greater range and coverage versatility

Figure 1 shows the front view of the WS-AP3825i and Figure 2 shows the front view of the WS-AP3825e. Both figures also show the location of the LAN ports, console port, external power supply connector, and reset switch.

Figure 3 shows the back view of the WS-AP3825e. The back panel is the same for both models, but there are no external antenna RSMA connectors on the WS-AP3825i.

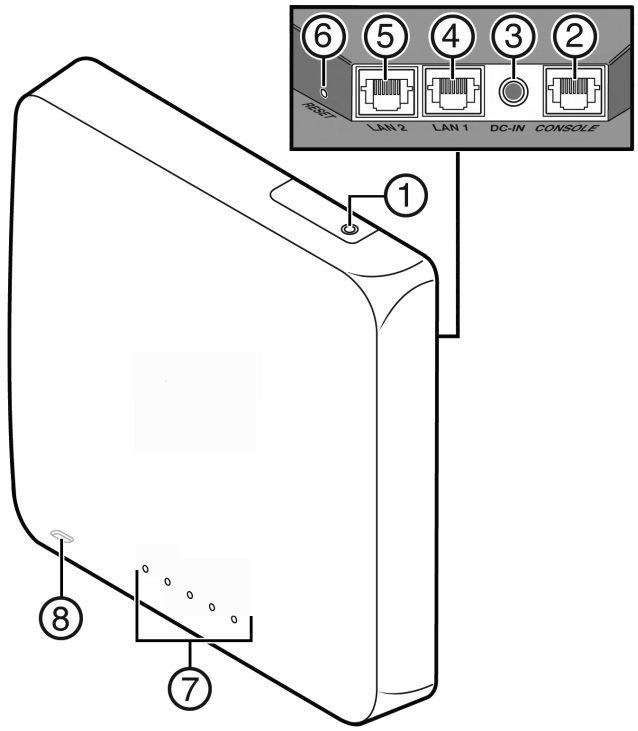
Figure 4 illustrates the WS-AP3825 LEDs.

Figure 1 Extreme Networks Wireless AP3825i Front View



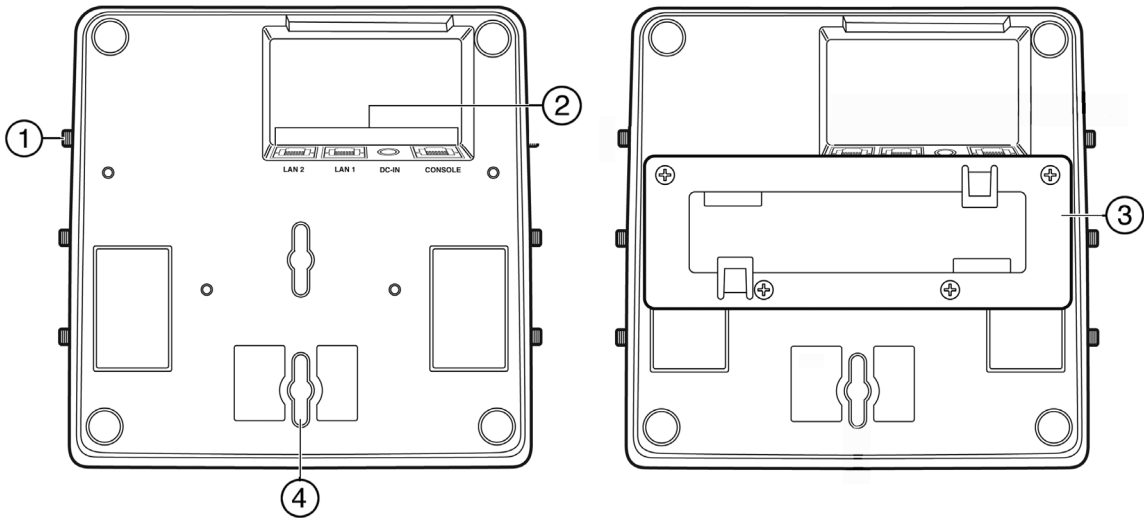
1 (not used)
2 Console port
3 External power supply port
4 LAN port 1
5 LAN port 2
6 Reset switch
7 LEDs (See Figure 4 for details)
8 (bottom) Slot for Kensington lock

Figure 2 Extreme Networks Wireless AP3825e Front View



1	(not used)	**6**	Reset switch
2	Console port	**7**	LEDs (See Figure 4 for details)
3	External power supply port	**8**	(bottom) Slot for Kensington lock
4	LAN port 1	**9**	RSMA External antenna connectors (6)
5	LAN port 2	**10**	

Figure 3 WS-AP3825 Back View

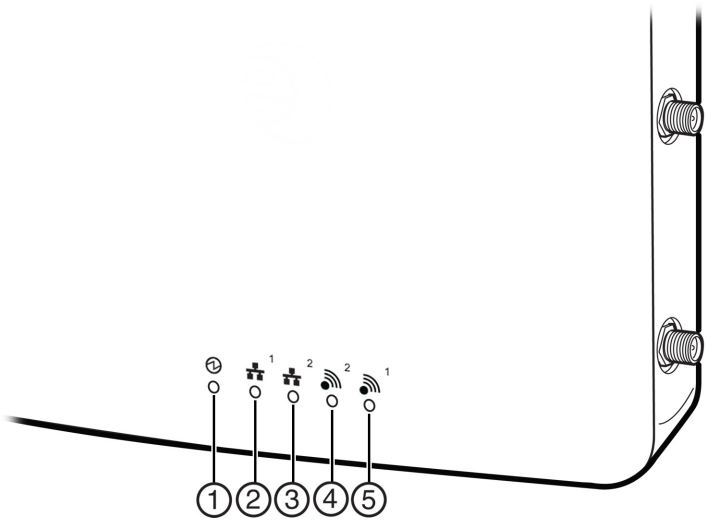


1	RSMA antenna connectors (WS-AP3825e only)	**4**	Mounting Slot
2	Port Bay		
3	Mount Bracket		

WS-AP3825 LED Indicators

Both models of the WS-AP3825 have four LED indicators, shown in Figure 4 below. The LEDs provide status information, described in Table 1, on the current state of the WS-AP3825. For more information, see the *Extreme Networks Wireless Convergence Software User Guide*.

Figure 4 WS-AP3825 LEDs (Front, lower right)



1 AP status
2 LAN 1 (Ethernet 1) link state
3 LAN 2 (Ethernet 2) link state
4 Radio 2 status (2.4 GHz)
5 Radio 1 status (5 GHz)

Table 1 WS-AP3825 LED Indications

LED	Status	Description
1 (AP status)	On Green	Indicates the WS-AP3825 is working normally.
	Flashing Green	Indicates: running a self test loading software program
	On Amber	Indicates a CPU/system failure.

Table 1 WS-AP3825 LED Indications (continued)

LED	Status	Description
2 (Ethernet link state) LAN 1	On Green	Indicates a valid 100Mbps Ethernet link.
	On Amber	Indicates a valid 1Gbps Ethernet link.
	Off	Indicates the link is down.
3 (Ethernet link state) LAN 2	On Green	Indicates a valid 100Mbps Ethernet link.
	On Amber	Indicates a valid 1Gbps Ethernet link.
	Off	Indicates the link is down.
4 (Radio 2 status)	On Green	Indicates Radio 2 is enabled.
	Off	Indicates Radio 2 is not on.
5 (Radio 1 status)	On Green	Indicates Radio 1 is enabled.
	Off	Indicates Radio 1 is not on.

Architectural Features

Console Port

The WS-AP3825 i and e models both include a single RJ45 console port (shown in Figure 1 and Figure 2) for debug purposes. This port enables connection of a console device to the AP through a serial cable. The console device can be a PC or workstation running a VT-100 terminal adapter emulator, or a VT-100 terminal.

LAN Port

The WS-AP3825 has two 10/100/1000BaseT RJ45 LAN ports (see Figure 1) that can be attached directly to a 10/100/1000BaseT LAN segment. This segment must conform to the IEEE 802.3 or 802.3u specifications.

The APs appear as Ethernet nodes and perform a bridging function by moving packets from the wired LAN to remote workstations on the wireless infrastructure.

The LAN ports also support power over Ethernet (PoE) based on the IEEE 802.3af standard. Installation on page 13, for information on supplying power to the AP network port from a network device, such as a switch, that provides Power over Ethernet (PoE).

Reset Switch

The WS-AP3825 provides a Reset Switch to reset or restore factory default configurations. Use a pen tip or a nail to press the switch button through the hole (located on the top side of the AP). If you hold down the button for less than 5 seconds, the AP performs a software interrupt, causing it to drop all connections and reset. If you hold the button down for 5 seconds or more, any configuration changes are removed, and the factory default configuration restores to the AP.

Kensington Lock Slot

There is a slot for a Kensington lock on the bottom side of the AP. See Kensington lock documentation for instructions on use of the lock.

6 Installation

This chapter provides installation instructions for the Extreme Networks Wireless WS-AP3825 access point and an optional AP power supply.

Unpacking the WS-AP3825

To unpack the access point:

1 Open the box and remove the packing material protecting the AP.

2 Verify that the carton contains the items listed in Table 2.

Table 2 WS-AP3825 Package Contents

Quantity	Item
1	WS-AP3825
2	Mounting brackets with screws
2	Wall mounting screws and plastic anchors
1	WS-AP3825 Quick Reference card

3 Perform a visual inspection of the AP for any signs of physical damage. Contact Extreme Networks if there are any signs of damage. Refer to Getting Help on page 5 for details.

Accessories

The following accessories are available for the Extreme Networks Wireless WS-AP3825. For ordering information, contact your Extreme Networks sales representative.

- 12V DC power supply (see External Power Supplies on page 27)
- External antennas (WS-AP3825e models only. See External Antennas on page 31)

Access Point Installation Procedures

Electrical Hazard: Only qualified personnel should install or service this unit.

Riesgo Electrico: Nada mas personal capacitado debe de instalar o darle servicio a esta unida.

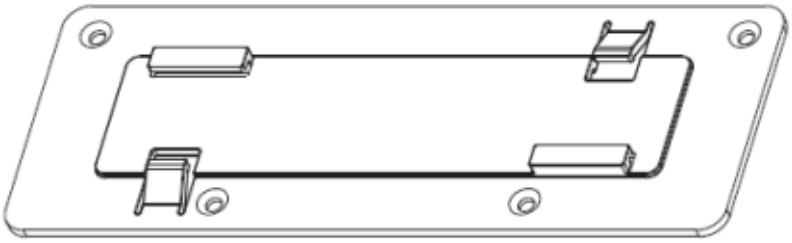
Elektrischer Gefahrenhinweis: Installationen oder Servicearbeiten sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

These procedures describe how to attach the WS-AP3825 to a drop ceiling (flat or protruded), and how to mount the AP to a wall.

Mounting the WS-AP3825 to a Drop Ceiling

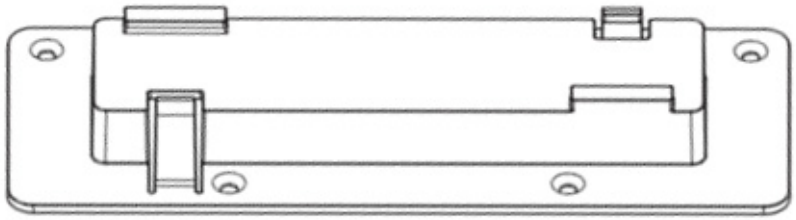
To mount the AP to a drop ceiling, use one of the mounting brackets provided with the AP. There are brackets for flat drop ceilings and protruded drop ceilings.

- Flat Drop Ceiling Bracket
  Flat drop ceilings are those in which the ceiling tiles rest flat (or nearly so) on their supporting T-bar rails. The flat drop ceiling bracket has a low flat profile, to mount the AP close against the T-bar rail.



- Protruded Drop Ceiling Bracket

Protruded drop ceilings are those in which the ceiling tiles protrude well beyond the T-bar rails on which they rest. The protruded drop ceiling bracket has an extended mount plate, allowing the AP to hang below the protruded ceiling tiles.



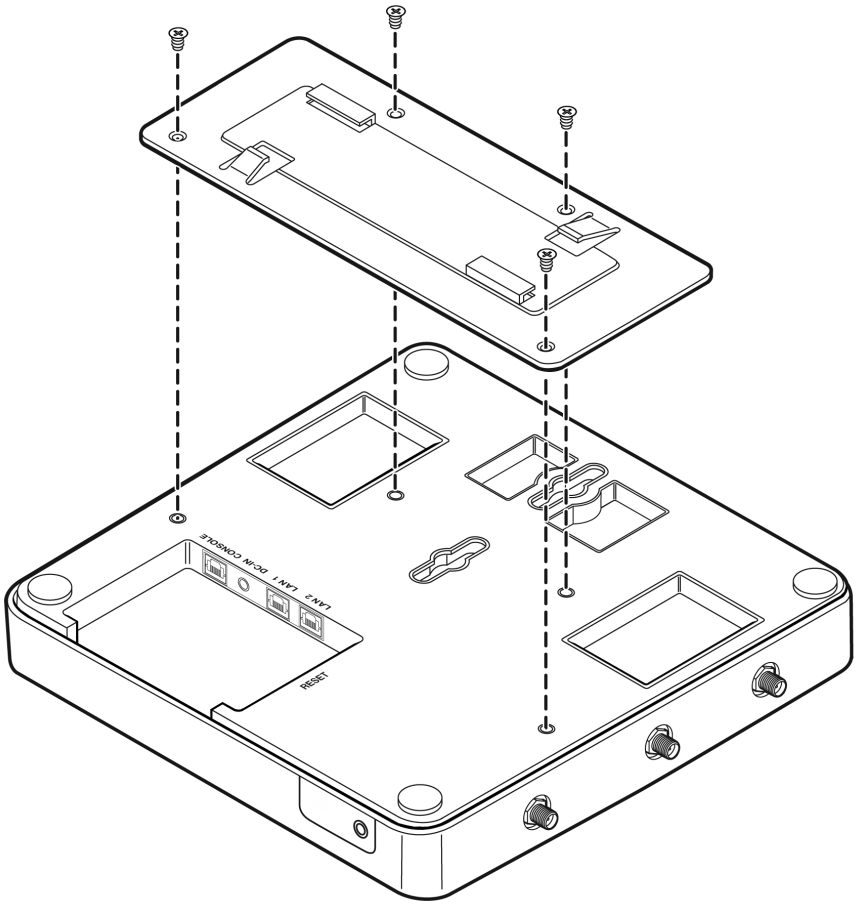
NOTE

We recommend that the first time you mount an AP3825 to a drop ceiling T-bar rail, you try mounting the bracket to a rail before attaching it to the back of an AP and mounting the AP to the rail. This way you can get the "feel" of the tilt and twist motion described in Step 3 in the procedure below, to make the bracket tabs clear the rail and slide over the rail lip on both sides.

To attach the WS-AP3825 to a drop ceiling:

1 Attach the T-bar rail mount bracket to the back of the AP by placing the bracket against the AP back, aligned as shown in Figure 5, with the bracket's countersink screw holes matched up with the screw holes on the AP. Screw the provided screws into the mounting bracket and AP as shown in Figure 5.

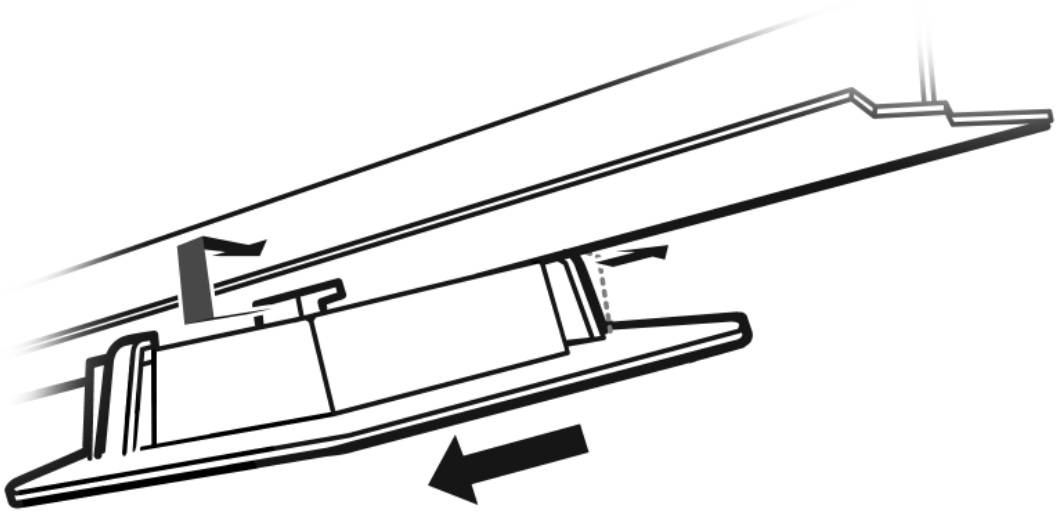
Figure 5 Attaching a Mount Bracket to the AP back



2 Remove the ceiling panels around the drop ceiling T-bar rails where you intend to mount the AP. Verify that the Ethernet cable that will connect to the AP can reach the AP at the point where you plan to mount it.

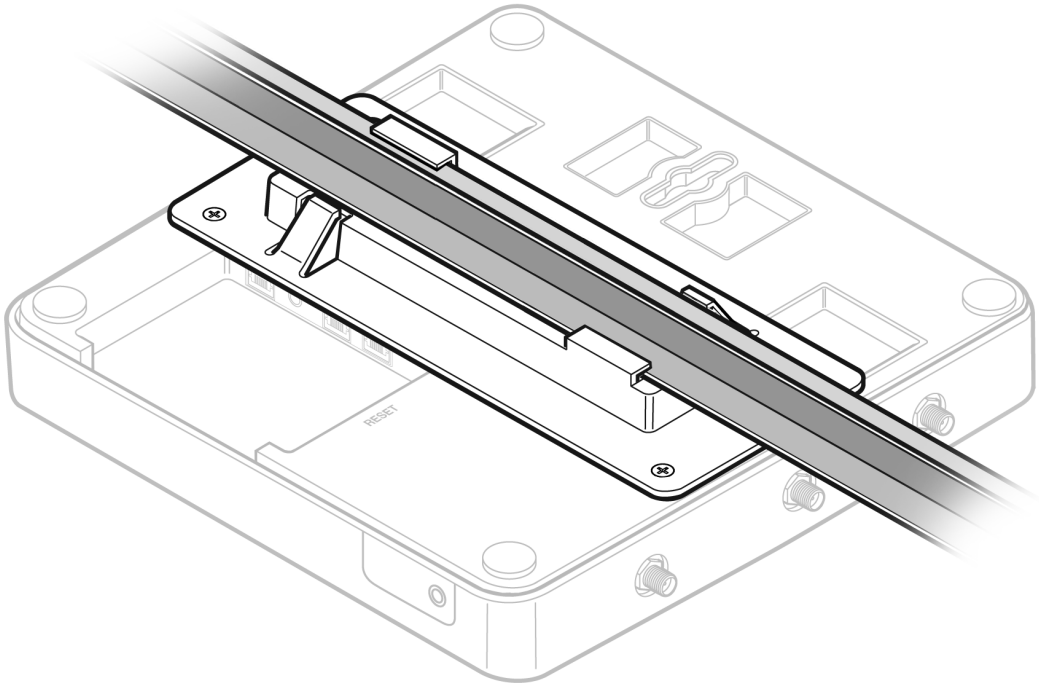
3 Hold the AP with the bracket against the flat side of the T-bar rail and [nearly] parallel to it. The clamping tabs fit over the rail easily if you slide one bracket tab over the lip of the rail, at a very slight angle to the rail, and then press the AP up against the rail (so that the opposite clamping tab clears the rail) and twist it so that the opposite clamping tab slides over the opposite rail lip as shown in Figure 6. There are flex tabs immediately opposite each bracket tab, that flex out (away from the rail) to stabilize the bracket against the rail while you pivot the AP and bracket to clear the rail.

Figure 6 Mounting the Bracket to the Ceiling Rail



4 When the bracket is aligned with the rail again, both clamping tabs are positioned on the T-bar rail lips. Figure 7 shows a mounting bracket, with an AP attached, firmly mounted on a drop-ceiling T-bar rail. Tap the AP to verify it is stable and won't fall off.

Figure 7 AP and Mounting Bracket Seated on T-bar Rail



5 Make a hole through the ceiling panel closest to the connector bay on the AP. Then run the Ethernet cable through the hole and into a LAN port (RJ45 Ethernet port) in the connector bay.

6 Replace the displaced ceiling panels.

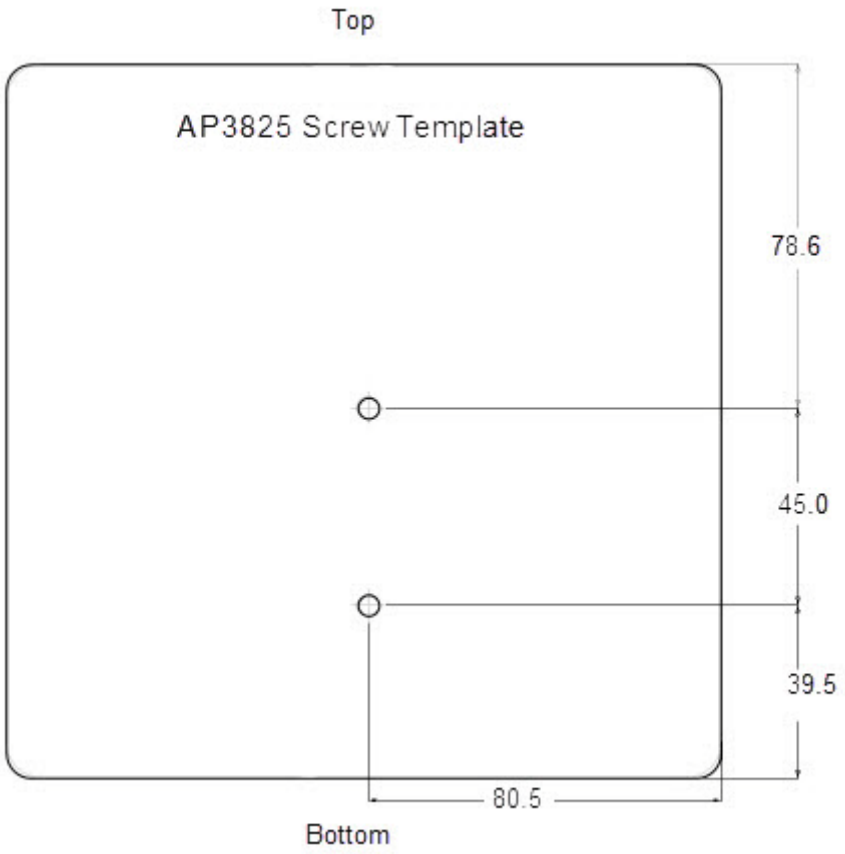
Mounting the WS-AP3825 to a Wall or Solid Ceiling

Screws for attaching the AP to a wall or solid ceiling are supplied with the product. Use the following procedure to mount the AP3825 to a flat wall.

1 Determine the spot where the AP is to be mounted, preferably high up on the wall (near the ceiling for maximum radio wave dispersion) but in reach of the Ethernet cable and a wall power outlet if you are not able to use Power over Ethernet.

2 Drill 2 holes in the wall to match the center of the two keyhole slots in the back of the AP. The location of the holes is depicted in Figure 8 (measurements are in millimeters). For a tight fit, the holes should be slightly smaller than the diameter of the provided plastic anchors.

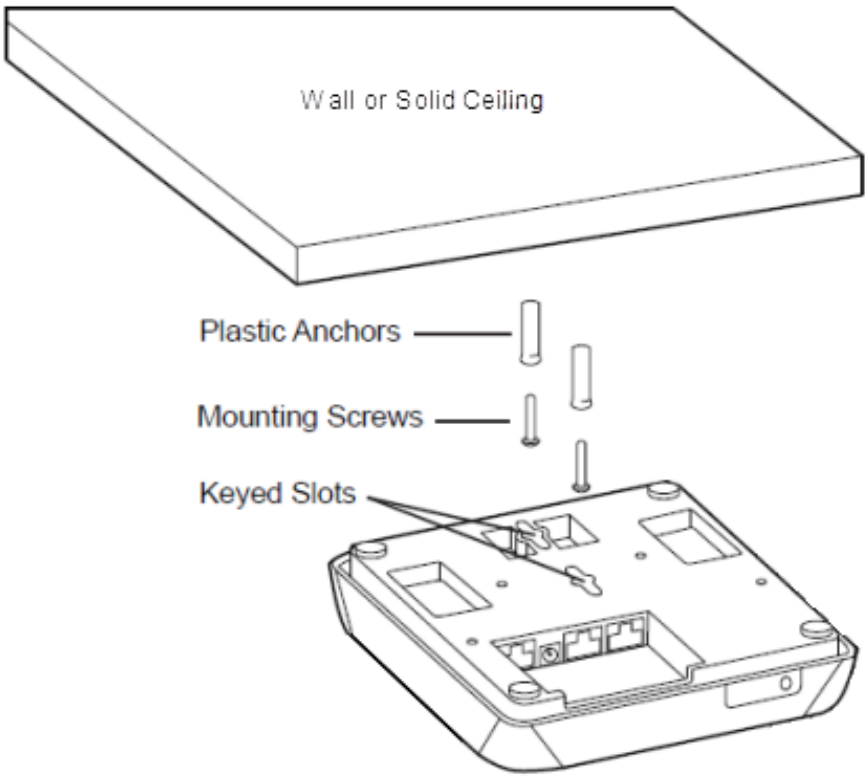
Figure 8 Drilling Template for Wall Mounting



3 Tap the plastic anchors into the holes with a hammer until they are flush with the wall, and screw the provided mounting screws into the anchors, with the head protruding 1/16" from the anchor.

4 Place the back of the AP against the wall with the protruding mounting screw heads fitting through the keyhole slots on the back of the AP, and slide the AP down until the AP rests on the mounting screw heads. Figure 9 shows an exploded view of this mounting method.

Figure 9 Mounting the WS-AP3825 to a Flat Wall or Solid Ceiling



5 Plug the Ethernet cable into the RJ-45 port (and plug the power cord into the power port, if applicable) on the back of the AP.

LAN/Console Connections

NOTE

Lan/Console connectors with shrouds will not fit into the ports. An optional jumper cable may be used or the shroud removed.

The WS-AP3825 has both a LAN and a Console port. Refer to Figure 1 for the location of these ports.

During administration and maintenance through the LAN or Console, the AP must have a power connection through either an Ethernet PoE cable or a DC power supply.

Power Connections

The AP can be powered in one of the following ways:

- Power over Ethernet (PoE)
  Power is provided through the RJ45 Ethernet port (LAN port) on the top of the AP. This is the preferred method of powering the AP on ceiling and high wall installations.
- Power by external power supply
  Where a PoE-capable Ethernet connection is unavailable or impractical, an external 12V DC power supply may be ordered separately to power the AP from a standard AC wall outlet.

Connecting an External DC Power Supply to the WS-AP3825

There are no wall mounts for the 12V DC power supplies. To connect a power supply to the AP for everyday operation, mount the AP and plug the power supply in to the DC-IN port (callout 3 in Figure 1 and Figure 2). If you have taken the AP off its mount for configuration and maintenance, you will still need to get power to it during the maintenance from a DC power supply or PoE LAN connector.

Configuring AP Channel Settings

The WS-AP3825e must be installed by a professional installer. Before starting the installation, the installer needs to determine/configure the following:

- Determine the Antenna Model
- Configure Radio RF Port
- Configure Radio Channel
- Configure Radio Transmit (Tx) Power

Determine the Antenna Model

The professional installer needs to determine antenna models and the number of antenna ports for that model. The number of ports can be determined from visual inspection of the antenna or from the antenna model name as follows:

- If the antenna model name contains a T or X (for example PRO-AO-xTxxxxx or AO-xXxxxxx), it is a triple port antenna.
- If the antenna model name contains a D (for example PRO-AO-xDxxxxx), it is a dual port antenna.
- If the antenna model name contains an S (for example PRO-AO-xSxxxxx), it is a single port antenna.

Configure Radio RF Port

The professional installer configures Radio RF ports where antenna ports will be connected.

NOTE

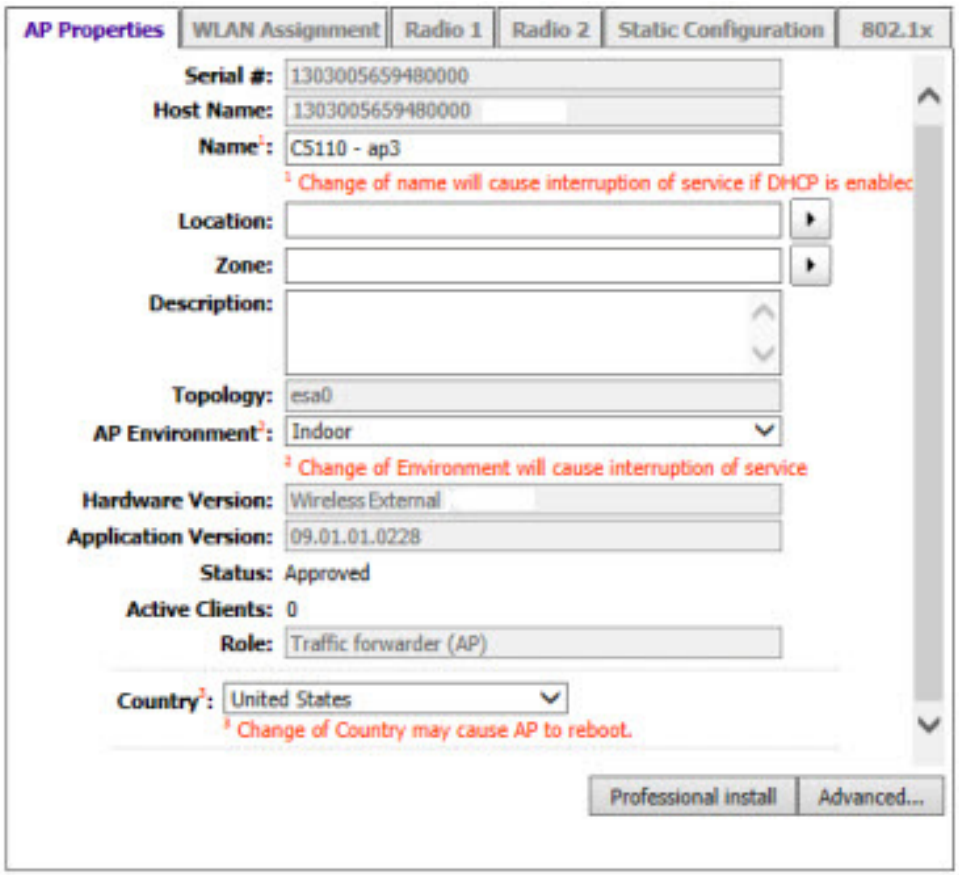
All professional antenna model names are prefixed with PRO.

To Configure Radio RF Ports through the Enterasys Wireless Assistant

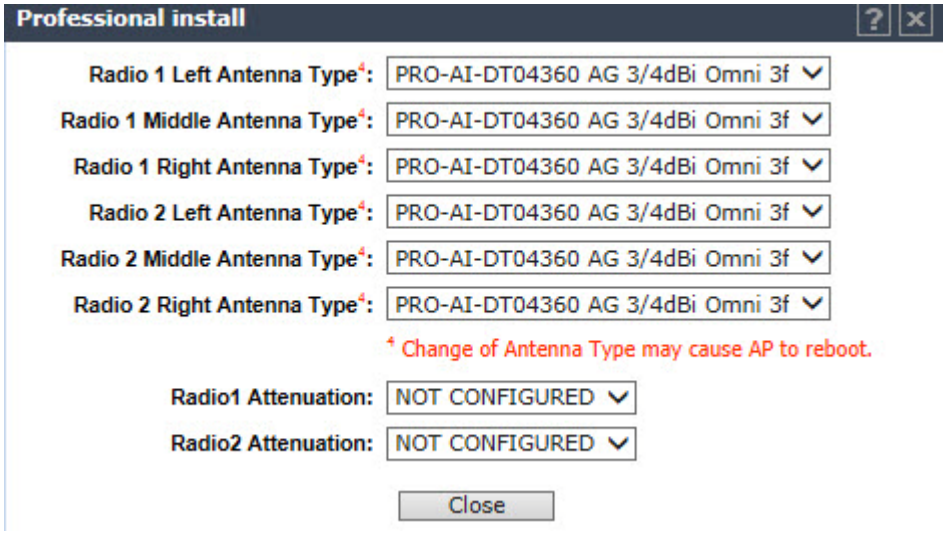
1 Log into the Wireless Assistant.

2 From the top menu, click **AP**. The **Wireless AP** screen is displayed.

3 Click the APs button in the left pane, then in the Wireless AP list, click the Wireless AP whose properties you want to modify. The **AP Properties** tab displays Wireless AP information.



4 Click **Professional Install.** The **Professional Install** dialog displays.



5 Modify the Radio Antenna Type as follows:

- If attaching triple port antennas, all three RF port should be configured with the same antenna type.
- If attaching dual port antennas, two of the radio RF ports should be configured with the same antenna type and the third (non-active port) should be configured to None.
- If attaching single port antennas, radio ports where antenna should be connected has to be set to the antenna type and non-active port should be set to None.

6 Modify Radio Attenuation as follows:

- Add any attenuation (dBm non-negative) due to cable loss or attenuator added to the line between AP port and the antenna.
- Same attenuator loss is assumed and is required for all 3 ports of the radio except when one or more port is not connected to the antenna and is properly terminated as describe in next step.
- Professional installer is responsible for accurately configuring port Attenuation. In no case, port attenuation should be configured higher than actual attenuation between the AP port and the antenna.

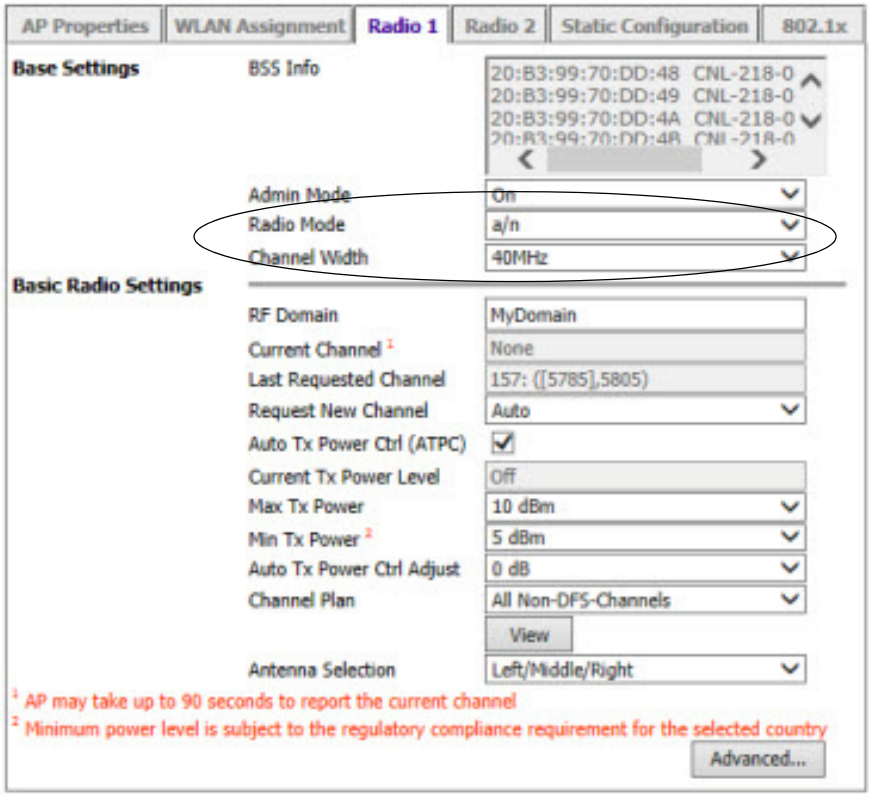
7 Install a terminator (rf 50 Ohm) on all ports where an antenna is not connected.

Configure Radio Channel

1 Click the APs button in the left pane, then in the Wireless AP list, click the Wireless AP whose properties you want to modify. The **AP Properties** tab displays Wireless AP information.

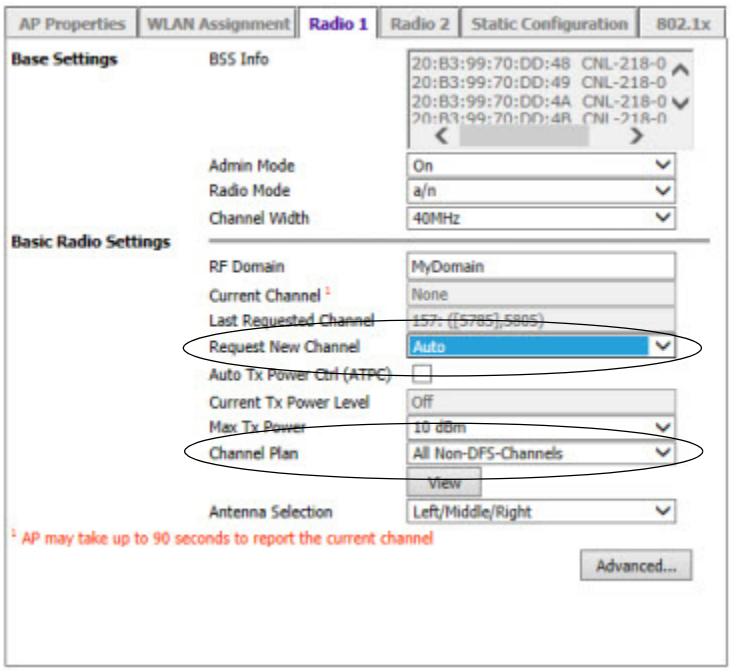
2 Click the **Radio 1** tab.

3 Configure the desired **Radio Mode** and **Channel Width**.



4 From the **Request a New Channel** drop-down menu, select a channel according to the site channel plan.

5 Request the AP to auto select the channel from the channel list set in the **Channel Plan** setting.



6 Repeat the process for **Radio 2**.

Configure Radio Transmit (Tx) Power

Based on the configured mode, channel, channel plan, and channel width for the specific antenna, the professional installer must enter the corresponding Transmit Power (Tx Power) for the desired Radio using the Enterasys Wireless Assistant.

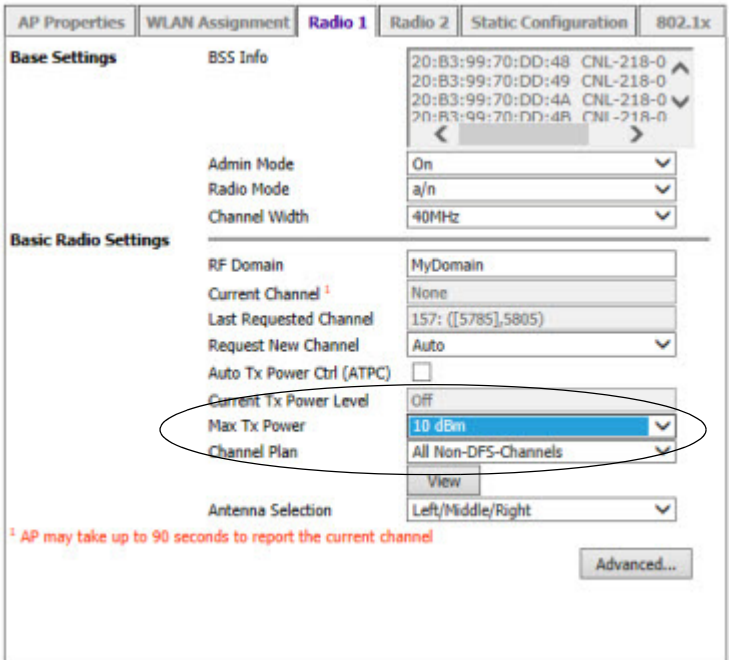
1 Log into the Wireless Assistant.

2 From the top menu, click **AP**. The Wireless AP screen is displayed.

3 Click the AP button in the left pane, then in the Wireless AP list, click the Wireless AP whose properties you want to modify. The **AP Properties** tab displays Wireless AP information.

4 Click the **Radio 1** tab.

5 **Max Tx Power** is automatically determined based on regulatory domain/country, antenna selected, line attenuation configured, channel and certification testing.



6 Professional installer is responsible for accurately configuring port Attenuation. In no case, port attenuation should be configured higher than actual attenuation between the AP port and the antenna.

7 Repeat the process for **Radio 2**.

5 Specifications

This appendix lists the specifications for the WS-AP3825i and WS-AP3825e access points and an external 12V DC power supply.

Table 3 Specifications for the WS-AP3825i and WS-AP3825e

Item	Specification
Enclosure material	Metal base, plastic housing
Power source	802.3af compliant PoE PD, 12V DC input
Power consumption	< 12.94W (Max.)
Outside dimensions (max) WS-AP3825e	Length: 190.5mm (7.5″) Width: 145mm to 180.0mm (7.5″ to 7.09″) Thickness (not including mounting bracket): 29mm (1.13″) to 38mm (1.5″).
Antenna (WS-AP3825i only)	6x internal antennas, single band
Uplink Interface	2x GbE interfaces with PoE
RoHS compliant	Yes
Radio Configuration	IEEE 802.11ac, a/b/g/n 2.4/5 GHz single-band, Dual-radio, 3x3:3 MIMO
Operating temperature	32º F to 122º F (0º C to +50º C)

External Power Supplies

WS-AP3825 APs may be powered by IEEE 802.3af compliant PoE cables connected to the Ethernet ports in the connector bay. This is usually the preferred method of powering for users that plan to mount the devices on ceilings or high up on walls. You can also power these APs with optional external power supplies.

Table 4 Universal Specifications for an External Power Supply

Item	Specification
Enclosure material	Plastic housing
AC Input	100-240V
DC output	12V
Output current (max)	2A
Output power (max)	24W

Table 5 lists recommended power supplies for the WS-AP3825, by country:

Table 5 Recommended DC Power Supplies for WS-AP3825

Country	Enterasys Part Number
Australia	WS-PS3X12-AU
Brazil	WS-PS3X12-BR
China	WS-PS3X12-CN
EU	WS-PS3X12-EU
UK	WS-PS3X12-UK
US	WS-PS3X12-NAM

Internal Antenna APs

Internal Antenna Access Points

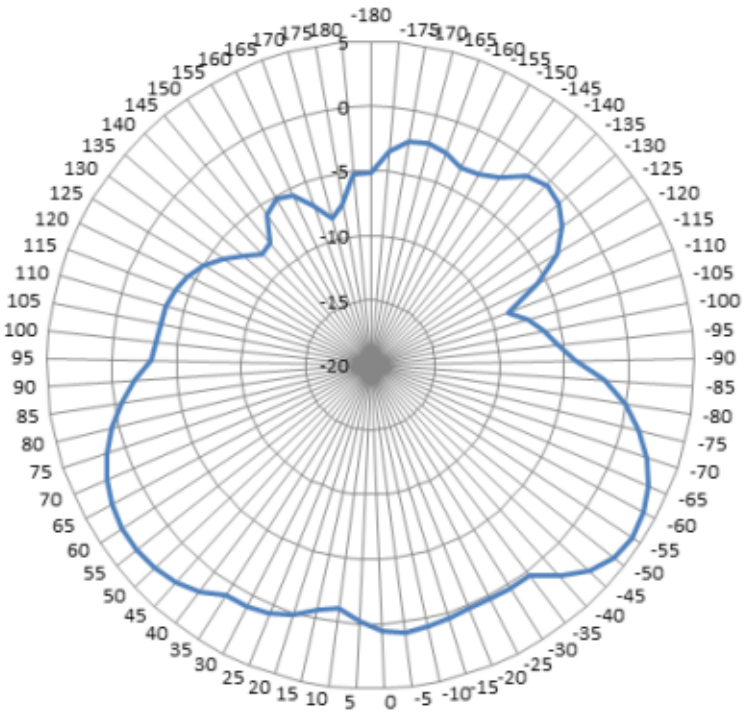
The WS-AP3825i is an indoor access with six integrated internal antennas. The following specifications are for the internal antennas:

Table 6 WS-AP3825i Internal Antennas

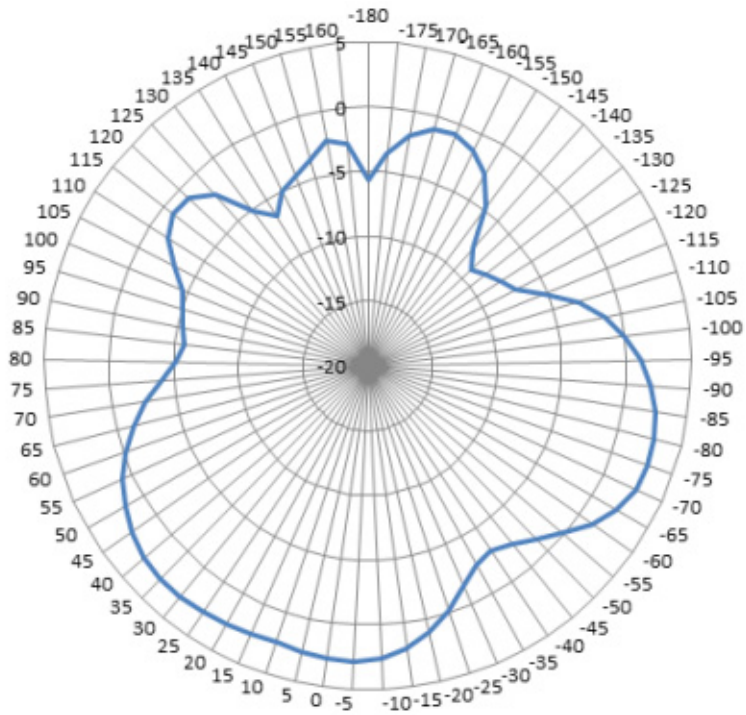
Model Type	Application	Description	Gain (dBi)	Frequency (GHz	Connector
WS-AP3825i	Indoor	MIMO, Single-band	4 dBi	2.4	None
			6 dBi	5	None

The following radiation patterns apply to the antennas in the WS-AP3825i only. In these diagrams, 0 degree is AP's front and +/- 180 degree is AP's back.

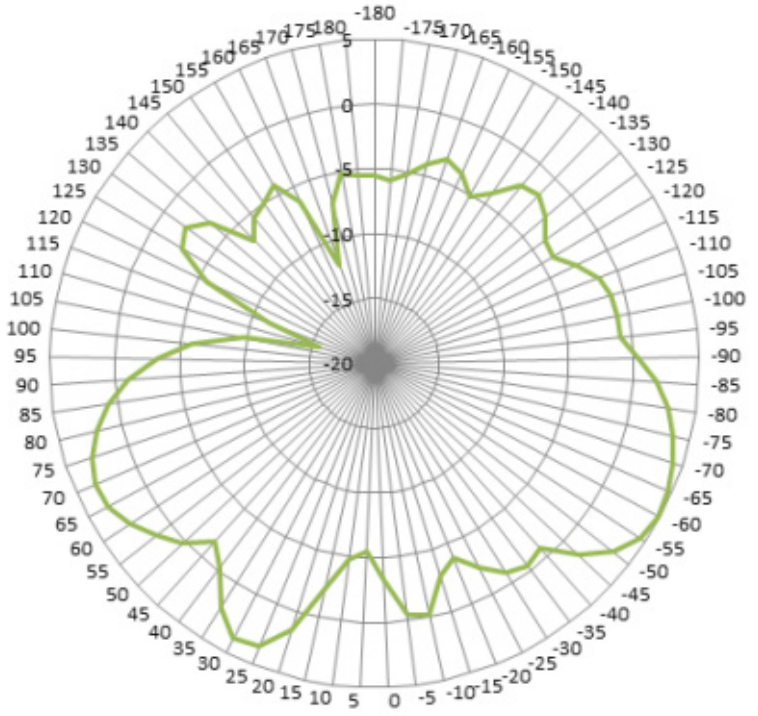
Horizontal Radiation Pattern 2.4 GHz



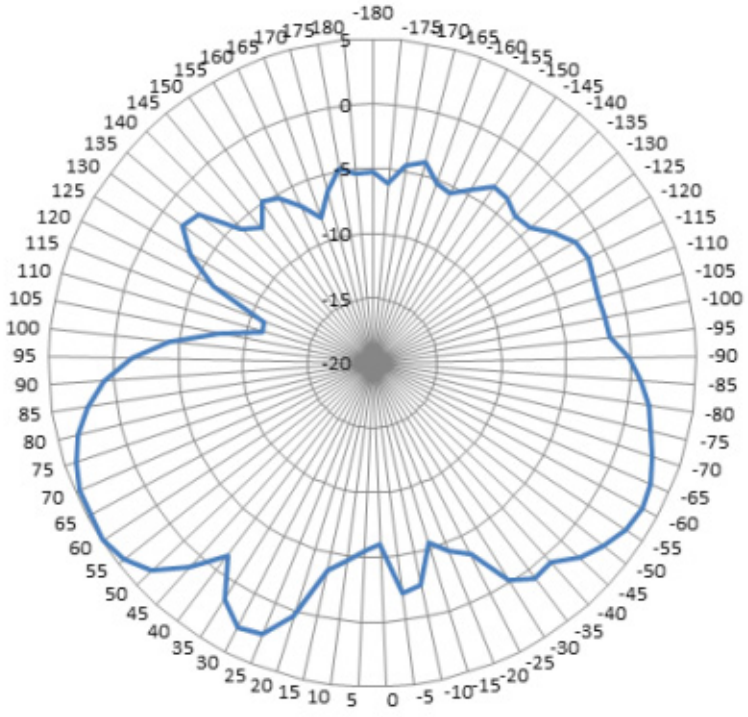
Vertical Radiation Pattern 2.4 GHz



Horizontal Radiation Pattern 5 GHz



Vertical Radiation Pattern 5 GHz



External Antennas

Table 7 lists the certified external antennas for WS-AP3825e. For more detailed specifications and radiation pattern diagrams, see the *Enterasys Wireless External Antenna Site Preparation and Installation Guide*.

Table 7 Certified External Antennas for WS-AP3825e

Model	Application	Description	Gain (dBi)	Frequency (GHz)	Connector Type
WS-ANT-2DIP-3	Indoor	MIMO; Single-band	3 dBi	2.4	3xRSMA
WS-ANT-5DIP-3	Indoor	MIMO; Single-band	3 dBi	5.0	3xRSMA
WS-AI-DX02360	Indoor	MIMO; Dual-band	2 dBi	2.4-2.5, 5.15-5.85	RSMA
WS-AI-DT05120	Indoor	MIMO; Sector; Dual-band	5 dBi x 3, 2:1	2.3 – 2.7, 4.9 – 6.1	RSMA
WS-AI-DX10055	Indoor	MIMO; Sector, Dual-band	10 dBi 6 dBi	2.4 – 2.5, 5.1 – 5.9	RSMA
WS-AI-DX07025	Indoor	MIMO; Sector; Dual-band	6.5 dBi 5.5 dBi	2.4 – 2.5, 5.1 – 5.9	RSMA

6 Regulatory Information

WARNING

Warnings identify essential information. Ignoring a warning can lead to problems with the application.

This appendix provides regulatory information for the Extreme Networks Wireless WS-AP3825i and WS-AP3825e access points.

NOTE

Throughout this appendix, the term ‘Extreme Networks Wireless AP3825 refers to the AP models WS-AP3825i, and WS-AP3825e. Specific AP models are identified in this appendix only where it is necessary to do so..

WARNING

Changes or modifications made to the Enterasys Wireless AP3715 which are not expressly approved by Extreme Networks could void the user's authority to operate the equipment.

Only authorized Extreme Networks service personnel are permitted to service the system. Procedures that should be performed only by Extreme Networks personnel are clearly identified in this guide.

Extreme Networks Wireless WS-AP3825i and WS-AP3825e

The following regulatory information applies to the Extreme Networks Wireless access points WS-AP3825i and WS-AP3825e.

United States

FCC Declaration of Conformity Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two 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 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 when the equipment is operated in a residential and business environment. This equipment generates, uses, and radiates radio frequency energy, and if not installed and used in accordance with instructions, may cause harmful interference. However, there is no guarantee that interference will not occur. If this equipment does cause harmful interference, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the transmitting antenna.
- Increase the separation between the equipment or devices.
- Connect the equipment to an outlet other than the receiver's.
- Consult a dealer or an experienced radio/TV technician for suggestions.

USA Conformance Standards

This equipment meets the following conformance standards:

Safety

- UL 60950-1

EMC

- FCC CFR 47 Part 15, Class B

Radio transceiver

- CFR 47 Part 15.247, Subpart C
- CFR 47 Part 15.407, Subpart E

Other

- IEEE 802.11a (5 GHz)
- IEEE 802.11b/g (2.4 GHz)
- IEEE 802.11n
- IEEE 802.3at (PoE)
- IEEE 802.3af (PoE)

WARNING

The Extreme Networks Wireless AP3825 must be installed and used in strict accordance with the manufacturer's instructions as described in this guide and related documentation for the device to which the Extreme Networks Wireless AP3825 is connected. Any other installation or use of the product violates FCC Part 15 regulations.

This Part 15 radio device operates on a non-interference basis with other devices operating at the same frequency when using the antennas provided or other Extreme Networks-certified antennas. Any changes or modifications to the product not expressly approved by Extreme Networks could void the user's authority to operate this device.

For the product available in the USA market, only channels 1 to 11 can be operated. Selection of other channels in the 2.4 GHz band is not possible.

FCC RF Radiation Exposure Statement

The Extreme Networks Wireless AP3825 complies with FCC RF radiated exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This device has been tested and has demonstrated compliance when simultaneously operated in the 2.4 GHz and 5 GHz frequency ranges. This device must not be co-located or operated in conjunction with any other antenna or transmitter.

The radiated output power of the Extreme Networks Wireless AP3825 is below the FCC radio frequency exposure limits as specified in “Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields” (OET Bulletin 65, Supplement C). This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body or other co-located operating antennas.

Canada

Industry Canada Compliance Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled “Digital Apparatus,” ICES-003 of Industry Canada.

Cet appareil numerique respecte les limites de bruits radioelectriques applicables aux appareils numeriques de Classe B prescrites dans la norme sur le materiel brouilleur: “Appareils Numeriques,” NMB-003 edictee par le Industrie Canada.

This device complies with RSS-210 of the Industry Canada Rules. 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 Class B digital apparatus complies with Canadian ICES-003.
- Operation in the 5150-5250 MHz band is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems.
- Users are advised that high power radars are allocated as primary users (meaning they have priority) and can cause interference in the 5250-5350 MHz and 5470-5850 MHz bands of LE-LAN devices.
- For the product available in the Canadian market, only channels 1 to 11 can be operated. Selection of other channels in the 2.4 GHz band is not possible.
- Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux conditions suivantes:

- Le dispositif ne doit pas produire de brouillage préjudiciable.
- Ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.
- Ce dispositif est conforme à la norme NMB-003 edictee par le Industrie Canada.
- Les dispositifs fonctionnant dans la bande 5 150-5 250 MHz sont réservés uniquement pour uneutilisation à l’intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux.
- Les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5250-5350 MHz et 5470-5850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.
- Pour le produit disponible sur le marché canadien, seuls les canaux 1 à 11 peuvent être utilisés. Il est impossible de sélectionner d’autres canaux dans la bande de 2.4 GHz.
- Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage

radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Canada Conformance Standards

This equipment meets the following conformance standards:

Safety

- C22.2 No.60950-1-03

EMC

- ICES-003, Class B

Radio transceiver

- RSS-210 (2.4 GHz and 5 GHz)

Other

- IEEE 802.11a (5 GHz)
- IEEE 802.11b/g (2.4 GHz)
- IEEE 802.11n
- IEEE 802.3at (PoE)
- IEEE 802.3af (PoE)

RF Safety Distance

The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with another antenna or transmitter.

Les antennes de ce transmetteur doivent être installées à une distance d'au moins 20 cm de toute personne et ne doivent pas être en placées à proximité immédiate ou utilisées conjointement avec une autre antenne ou un autre transmetteur

European Community

The Extreme Networks Wireless AP3825 is designed for use in the European Union and other countries with similar regulatory restrictions where the end user or installer is allowed to configure the Extreme Networks Wireless AP3825 for operation by entry of a country code relative to a specific country. After the country code is selected, the Extreme Networks Wireless AP3825 uses the proper frequencies and power outputs for that country code.

The Extreme Networks Wireless AP3825 is intended for indoor use and must be installed in a proper indoor location. Contact local Authority for procedure to follow and regulatory information. For more details on legal combinations of frequencies, power levels and antennas, contact Extreme Networks.

Declaration of Conformity with R&TTE Directive of the European Union 1999/5/EC

The following symbol indicates compliance with the Essential Requirements of the R&TTE Directive of the European Union (1999/5/EC).

Declaration of Conformity in Languages of the European Community

English	Hereby, Extreme Networks, declares that this Radio LAN device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Finnish	Valmistaja Extreme Networks vakuuttaa täten että Radio LAN device tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Dutch	Hierbij verklaart Extreme Networks dat het toestel Radio LAN device in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG. Bij deze verklaart Extreme Networks dat deze Radio LAN device voldoet aan de essentiële eisen en aan de overige relevante bepalingen van Richtlijn 1999/5/EC.
French	Par la présente Extreme Networks déclare que l'appareil Radio LAN device est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE. Par la présente, Extreme Networks déclare que ce Radio LAN device est conforme aux exigences essentielles et aux autres dispositions de la directive 1999/5/CE qui lui sont applicables.
Swedish	Härmed intygar Extreme Networks att denna Radio LAN device står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Danish	Undertegnede Extreme Networks erklærer herved, at følgende udstyr Radio LAN device overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.

German	Hiermit erklärt Extreme Networks die Übereinstimmung des "WLAN Wireless Controller bzw. Access Points" mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 1999/5/EG.
Greek	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Extreme Networks ΔΗΛΩΝΕΙ ΟΤΙ Radio LAN device ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
Icelandic	Extreme Networks lysir her med yfir að thessi bunadur, Radio LAN device, uppfyllir allar grunnkrofur, sem gerdar eru i R&TTE tilskipun ESB nr 1999/5/EC.
Italian	Con la presente Extreme Networks dichiara che questo Radio LAN device è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Spanish	Por medio de la presente Extreme Networks declara que el Radio LAN device cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Portuguese	Extreme Networks declara que este Radio LAN device está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
Malti	Hawnhekk, Extreme Networks, jiddikjara li dan Radio LAN device jikkonforma mal-htigijiet essenzjali u ma provvedimenti ohrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.

New Member States Requirements of Declaration of Conformity

Estonian	Käesolevaga kinnitab Extreme Networks seadme Radio LAN device vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
Hungary	Alulírott, Extreme Networks nyilatkozom, hogy a Radio LAN device megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.
Slovak	Extreme Networks týmto vyhlasuje, že Radio LAN device spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
Czech	Extreme Networks tímto prohlašuje, že tento Radio LAN device je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES."
Slovenian	Šiuo Extreme Networks deklaruoja, kad šis Radio LAN device atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
Latvian	Ar šo Extreme Networks deklarē, ka Radio LAN device atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem
Lithuanian	Extreme Networks deklaruoja, kad Radio LAN device atitinka 1999/5/EC Direktyvos esminius reikalavimus ir kitas nuostatas".
Polish	Niniejszym, Extreme Networks, deklaruję, że Radio LAN device spełnia wymagania zasadnicze oraz stosowne postanowienia zawarte Dyrektywie 1999/5/EC.

European Conformance Standards

This equipment meets the following conformance standards:

Safety

- 2006/95/EC Low Voltage Directive (LVD)
- IEC/EN 60950-1 + National Deviations

EMC (Emissions / Immunity)

- 2004/108/EC EMC Directive
- EN 55011/CISPR 11, Class B, Group 1 ISM
- EN 55022/CISPR 22, Class B
- EN 55024/CISPR 24, includes IEC/EN 61000-4-2,3,4,5,6,11
- EN 61000-3-2 and -3-3 (Harmonics and Flicker)
- EN 60601-1-2 (EMC immunity for medical equipment)
- EN 50385 (EMF)
- ETSI/EN 301 489-1 & -17

Radio transceiver

- R&TTE Directive 1999/5/EC
- ETSI/EN 300 328 (2.4 GHz)
- ETSI/EN 301 893 (5 GHz)

Other

- IEEE 802.11a (5 GHz)
- IEEE 802.11b/g (2.4 GHz)
- IEEE 802.11n
- IEEE 802.3at (PoE)
- IEEE 802.3af (PoE)

RoHS

- European Directive 2002/95/EC

Conditions of use in the European Community

Some EU countries allow outdoor operation with limitations and restrictions, which are described in this section. It is the responsibility of the end user to ensure operation in accordance with these rules, frequencies, and transmitter power output. The Extreme Networks Wireless AP3825 must not be operated until configured for the customer's geographic location.

CAUTION

The user or installer is responsible to ensure that the Extreme Networks Wireless AP3825 is operated according to channel limitations, indoor / outdoor restrictions, license requirements, and within power level limits for the current country of operation. A configuration utility has been provided with the Wireless AP to allow the end user to check the configuration and make necessary configuration changes to ensure proper operation in accordance with the spectrum usage rules for compliance with the European R&TTE directive 1999/5/EC.

CAUTION

Please follow the instructions in this user guide to configure the Extreme Networks Wireless AP3825.

- Each Wireless AP is configured with a default group of settings. There is the ability to change these settings. The user or installer is responsible to ensure that each Extreme Networks Wireless AP3825 is configured properly.
- The software within the Wireless AP automatically limits the allowable channels and output power determined by the selected country code. Selecting the incorrect country of operation or misidentifying the antenna being used,may result in illegal operation and may cause harmful interference to other systems.
- This device employs a radar detection feature required for European Community operation in the 5 GHz band. This feature is automatically enabled when the country of operation is correctly configured for any European Community country. The presence of nearby radar operation may result in temporary interruption of operation of this device. The radar detection feature will automatically restart operation on a channel free of radar.
- The 5150- 5350 MHz band, channels 36, 40, 44, 48, 52, 56, 60, or 64, are restricted to indoor use only.
- The 2.4 GHz band, channels 1 - 13, may be used for indoor use but there may be some channel restrictions.

European Spectrum Usage Rules

The AP configured with approved internal antennas can be used for indoor transmissions throughout the European community as displayed in Table 8. Some restrictions apply in France, Greece, and Italy.

Table 8 European Spectrum Usage Rules

Country	5.15-5.25 (GHz) Channels: 36,40,44,48	5.25-5.35 (GHz) Channels: 52,56,60,64	5.47-5.725 (GHz) Channels: 100,104,108,112,116, 132,136,140	2.4-2.4835 (GHz) Channels: 1 to 13 (Except Where Noted)
Austria	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Belgium	Indoor only	Indoor only	Indoor or outdoor *	Indoor or outdoor
Bulgaria	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Croatia	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Cyprus	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Czech Rep.	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Denmark	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Estonia	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Finland	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
France	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Germany	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Greece	Indoor only	Indoor only	Indoor (Outdoor w/ License)	Indoor (Outdoor w/ license)
Hungary	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Iceland	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Ireland	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Italy	Indoor only	Indoor only	Indoor or outdoor	Indoor (Outdoor w/ license)
Latvia	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Liechtenstein	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Lithuania	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Luxembourg	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Malta	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Netherlands	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Norway	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Poland	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor

Table 8 European Spectrum Usage Rules (continued)

Country	5.15-5.25 (GHz) Channels: 36,40,44,48	5.25-5.35 (GHz) Channels: 52,56,60,64	5.47-5.725 (GHz) Channels: 100,104,108,112,116, 132,136,140	2.4-2.4835 (GHz) Channels: 1 to 13 (Except Where Noted)
Portugal	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Romania	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Slovak Rep.	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Slovenia	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Spain	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Sweden	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Switzerland	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
Turkey	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor
U.K	Indoor only	Indoor only	Indoor or outdoor	Indoor or outdoor

Certifications of Other Countries

The Extreme Networks Wireless AP3825 has been certified for use in various other countries. Once the correct country code is selected, the Wireless AP automatically uses the proper frequencies and power outputs for that country code.

It is the responsibility of the end user to select the proper country code for the country within which the device will be operated, or run the risk violating local laws and regulations.

Other Country Specific Compliance Standards, Approvals and Declarations

- IEC 60950-1 CB Scheme + National Deviations
- AS/NZS 60950.1 (Safety)
- AS/NZS 3548 (Emissions via EU standards – ACMA)
- AS/NZS 4288 (Radio via EU standards)
- EN 300 328 (2.4 GHz)
- EN 301 893 (5 GHz)
- EN 301 489-1 & -17 (RLAN)
- IEEE 802.11a (5 GHz)
- IEEE 802.11b/g (2.4 GHz)
- IEEE 802.11n
- IEEE 802.3at (PoE)
- IEEE 802.3af (PoE)

RF Safety Distance

The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with another antenna or transmitter.