



ExtremeWireless™ WS- AP3865e Installation Guide

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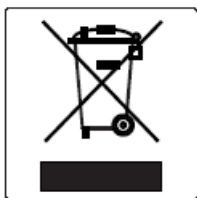
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| 电路模块 (Circuit Modules) | × | ○ | ○ | ○ | ○ | ○ |
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About This Guide

The guide describes how to mount and connect cables to the IdentiFi Wireless Outdoor Access Point WS-AP3865e. In addition, this guide provides information on the product certifications and national approvals for the WS-AP3865e.



Note: This guide does not provide information on configuration of the WS-AP3865e. For information on how to configure the WS-AP3865e, see the *IdentiFi Wireless 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.

This product should be installed and serviced by a qualified licensed technician, electrician, or electrical maintenance person familiar with its operation and the hazards involved. Proper installation, which includes wiring, mounting, fusing or other over current protection and grounding, can reduce the chance of electric shocks, fires, or explosion in this product or products used within this product.

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-AP3865e. A general working knowledge of data communications networks is helpful when setting up this module.

This preface provides an overview of this guide, and a brief summary of each chapter; 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-AP3865e features. | Chapter 1, Introduction |
| Instructions to mount the WS-AP3865e, attach antennas, connect cables, and connect power. Instructions are also included to mount and connect the WS-AP3865e Power Supply. | Chapter 2, Installation |
| Specifications, environmental requirements, and physical properties of the WS-AP3865e and WS-AP3865e Power Supply. | Appendix A, Specifications |
| Regulatory certifications and national approvals. | Appendix B, Regulatory Information |

Related Documents





The manuals listed below can be obtained from the World Wide Web in Adobe Acrobat Portable Document Format (PDF) at the following site:

<https://extranet.enterasys.com/downloads/>

- *IdentiFi Wireless AP External Antenna Site Preparation and Installation Guide*
- *IdentiFi Wireless Software User Guide*

Typographical Conventions

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

| | |
|---|--|
| blue 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, 6x1xx, the 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: Verweist 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! |

Introduction

This chapter provides general information about the Identifi Wireless Outdoor Access Point WS-AP3865e.

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WS-AP3865e Overview

The WS-AP3865e (see [Figure 1-1](#) on page 1-2) enables you to extend your wireless LAN beyond the boundaries of indoor locations. They are resistant to harsh outdoor conditions and extreme temperatures. Using the advanced full mesh wireless distribution feature of the wireless LAN, the WS-AP3865e can extend your wireless LAN to outdoor locations without Ethernet cabling. A mounting bracket is available to enable quick and easy mounting of the WS-AP3865e to walls, rails, and poles.

The WS-AP3865e is an 802.11ac AP that supports 802.11a/802.11g and 802.11b legacy devices. It is delivered in a rugged enclosure. The WS-AP3865e supports a variety of antennas, providing range and coverage versatility.

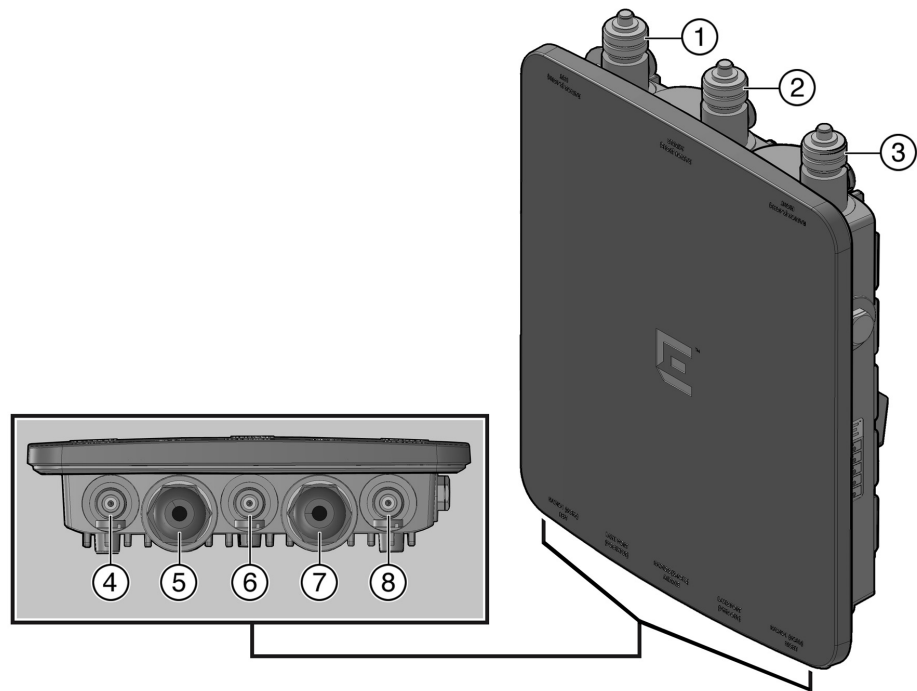
The WS-AP3865e interoperates fully with the wireless LAN, including support for wireless VoWLAN, branch office mode, availability and mobility features.

Figure 1-1 WS-AP3865e Front View



The following view (see [Figure 1-2](#)) illustrate the connections to the WS-AP3865e.

Figure 1-2 WS-AP3865e Top/Bottom View



- | | |
|--------------------------------------|--------------------------------------|
| 1 Radio 2 - Left Antenna (2.4 GHz) | 5 LAN 1 Port (POE Input) |
| 2 Radio 1 - Middle Antenna (5.0 GHz) | 6 Radio 2 - Middle Antenna (2.4 GHz) |
| 3 Radio 2 - Right Antenna (2.4 GHz) | 7 LAN 2 Port (Pwr Out) |
| 4 Radio 1 - Left Antenna (5.0 GHz) | 8 Radio 1 - Right Antenna (5.0 GHz) |



Note: The WS-AP3865e provides six external antenna ports. The network administrator determines which antenna port will be used based on the external antenna selected. The WS-AP3865e can also be configured to select the antenna that provides the best possible data transmission (diversity).

WS-AP3865e LED Indicators

The WS-AP3865e provides four LED indicators (see [Figure 1-2](#)). The LEDs provide status information (see [Table 1-1](#) on page 1-3) on the current state of the WS-AP3865e. For more information, see the *Identifi Wireless Software User Guide*.

Figure 1-3 WS-AP3865e LEDs

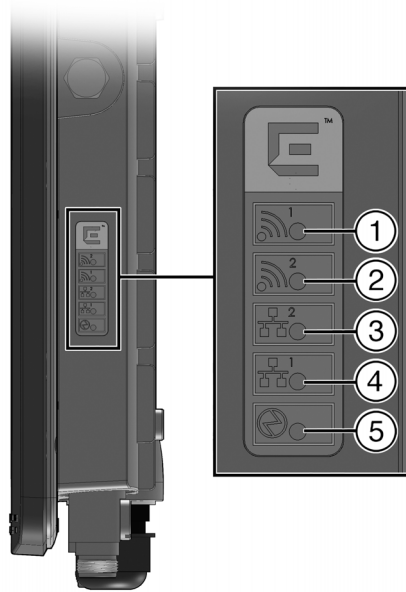


Table 1-1 WS-AP3865e LED Status Indicators

| LED | Status | Description |
|-------------------------------|----------------|--|
| 1 (Radio 1 status) | On Green | Indicates Radio 1 is enabled. |
| | Off | Indicates Radio 1 is not on. |
| 2 (Radio 2 status) | On Green | Indicates Radio 2 is enabled. |
| | Off | Indicates Radio 2 is not on. |
| 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 (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. |
| 5(AP status) | On Green | Indicates the WS-AP3865e is working normally. |
| | Flashing Green | Indicates: <ul style="list-style-type: none"> • running a self test • loading software program |
| | On Amber | Indicates a CPU/system failure. |

Antennas

The WS-AP3865e includes external antennas for wireless communications. The WS-AP3865e can transmit from multiple antennas at the same time, as defined with MIMO operation, but the antennas must be selected manually based on customer requirements and coverage area. For a list of external antennas, refer to [Appendix B, WS-AP3865e Approved External Antennas](#).

External Antenna Connectors

The WS-AP3865e supports six external antenna connections for both 2.4GHz and 5GHz radios. These antennas offer a variety of options for extending the radio range and shaping the coverage area. For a list of external antennas, refer to [Appendix B, WS-AP3865e Approved External Antennas](#).

LAN Ports

The WS-AP3865e has two 10/100/1000BaseT RJ45 LAN ports (see [Figure 1-2](#) on page 1-2) 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 WS-AP3865e appears as an Ethernet node and performs a bridging function by moving packets from the wired LAN to remote workstations on the wireless infrastructure.

Installation

This chapter provides installation instructions for the Identifi Wireless Outdoor Access Point WS-AP3865e.

| For information about... | Refer to page... |
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Package Contents

The WS-AP3865e package includes components necessary for installation.

Unpacking the WS-AP3865e

Unpack the WS-AP3865e as follows:

1. Open the box and remove the packing material protecting the WS-AP3865e.
2. Verify that the contents of the carton contains the items listed in [Table 2-1](#).

Table 2-1 WS-AP3865e Supplied Components

| Quantity | Item |
|----------|---|
| 2 | Mounting brackets (wall & pole) |
| 1 | Hardware bag that includes: 2 stainless steel tie back strap (supports pole diameters from 1.25 to 2.5 and 6 to 7 inches) 8 M4 screw assemblies 4 flat washers 4 hex nuts 4 anchor assemblies (w/anchors, flat washers and hex nuts) 4 split washers 1 ground screw assembly |
| 2 | RJ45 waterproof connector assemblies (attached to AP) |

Table 2-1 WS-AP3865e Supplied Components (Continued)

| Quantity | Item |
|----------|----------------------------|
| 1 | WS-AP3865e Quick Reference |

3. Perform a visual inspection of the WS-AP3865e for any signs of physical damage. Contact Extreme Networks if there are any signs of damage.

Separately Ordered Components

The following list of accessories are available for the IdentifiFi Wireless Access Point WS-AP3865e. For ordering information, contact your Extreme Networks sales representative.

- Antennas. Refer to “[WS-AP3865e Approved External Antennas](#)” on page B-11 and the *IdentifiFi Wireless AP External Antenna Site Preparation and Installation Guide* for more information about these antennas. This document is available at: <https://extranet.enterasys.com/downloads/>.
- Power over Ethernet (PoE) Injector. The following 802.3at PoE injectors are recommended for use with the WS-AP3865e:
 - PD-9001GR-ENT (30W, indoor PoE injector)
 - PD-9001GO-ENT (30W, outdoor PoE injector)
 - PD-9501GR/AC (60W, outdoor PoE injector)



Note: When the AP3865 is powered by the Power Injector, the DATA port of the Injector should be connected to a non PoE switch or, if the switch is PoE capable, PoE must be DISABLED on the DATA port.

- Terminator cap. This part is listed as a spare item as the WS-AP3865e is shipped with six terminator caps. If you are not attaching six antennas to the WS-AP3865e, you must use a terminator cap on the antenna connector not being used.
 - WS-CAB-NTERM — Terminator, Standard Polarity, Type-N Plug, 50 OHM, 1W
- Cables to connect the lightning protectors on the enclosure to the antennas. All cables listed below have Standard Polarity Type-N jack and plug connectors.
 - WS-CAB-L200C20N — 20 foot LMR200 cable
 - WS-CAB-L400C06N — 6 foot LMR400 cable
 - WS-CAB-L400C20N — 20 foot LMR400 cable
 - WS-CAB-L400C50N — 50 foot LMR400 cable
 - WS-CAB-L400C75N — 75 foot LMR400 cable
 - WS-CAB-L600C25N — 25 foot LMR600 cable
 - WS-CAB-L600C50N — 50 foot LMR600 cable

WS-AP3865e Installation Procedures



Electrical Hazard: This product should be installed and serviced by a qualified licensed technician, electrician, or electrical maintenance person familiar with its operation and the hazards involved.

Install the WS-AP3865e by following these procedures:

- [Removing the AP Cover](#)

- [Attaching the Mounting Bracket to the AP](#)
- [Mounting the WS-AP3865e to a Wall](#)
- [Mounting the WS-AP3865e to a Pole](#)
- [Attaching Antennas](#)
- [LAN 1/LAN 2 Connections](#)
- [Ground Connection](#)

Removing the AP Cover

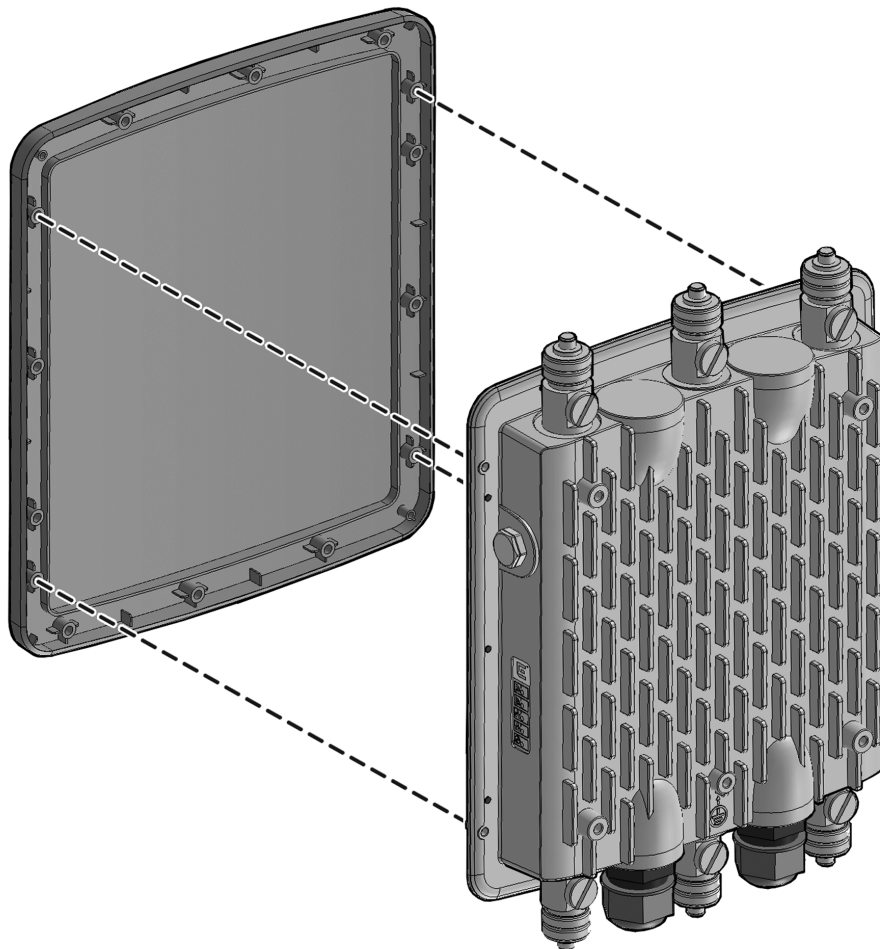
If desired, remove the AP cover for custom painting.



Note: The cover must be painted and reinstalled prior to installing the AP mounting bracket

1. Remove the four mounting screws as shown in Figure 3.
2. Carefully separate the cover from the AP and paint as desired.
3. Reinstall the cover on the AP with four mounting screws.

Figure 2-1 AP Cover



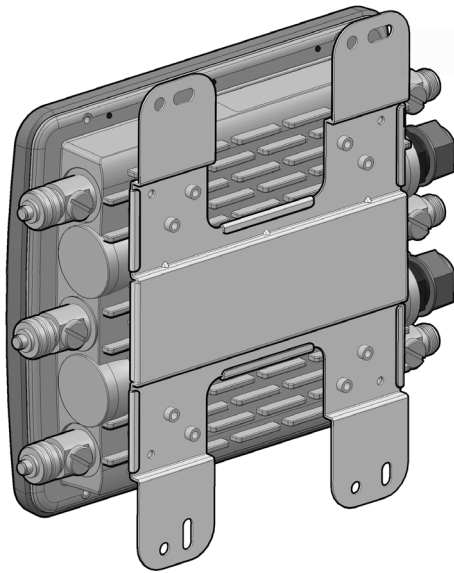
Attaching the Mounting Bracket to the AP

To attach the mounting bracket to the WS-AP3865e:

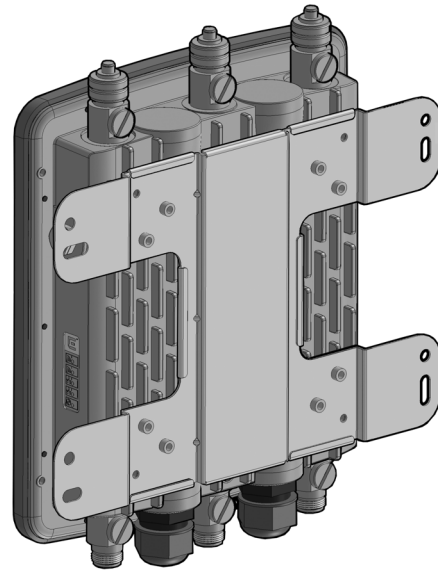
1. Determine the desired orientation (vertical or horizontal) of the mounting bracket (see [Figure 2-2](#) on page 2-4).
2. Attach the mounting bracket to the WS-AP3865e using four M4 screws, four spring washers, and four flat washers.
3. Tighten the four screws to a torque of 12.0 in-lbs.

Figure 2-2 Mounting Bracket Orientation

Horizontal Bracket Orientation



Vertical Bracket Orientation

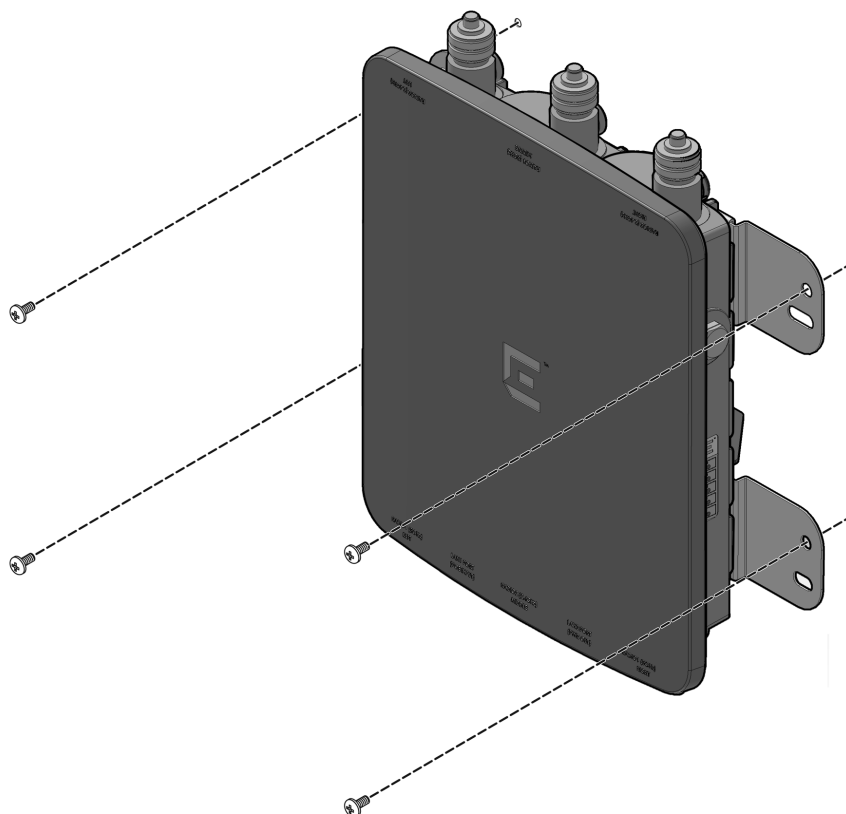


Mounting the WS-AP3865e to a Wall

To attach the WS-AP3865e to a wall:

1. Using the mounting bracket as a guide, mark the location for the mounting screws on a horizontal, flat wall surface.
2. Drill four holes into the wall as follows:
 - for installing the AP on a masonry wall, use a 5/16" diameter bit.
 - for other materials, use the appropriate drill for the screws being used.
3. For masonry installations, place four anchor assemblies into the holes.
4. Secure the WS-AP3865e (with the attached mounting bracket) to the wall using four mounting screws (see [Figure 2-3](#) on page 2-5).
5. Tighten the four screws to a torque of 10.0 in-lbs if you are using #10 screws.

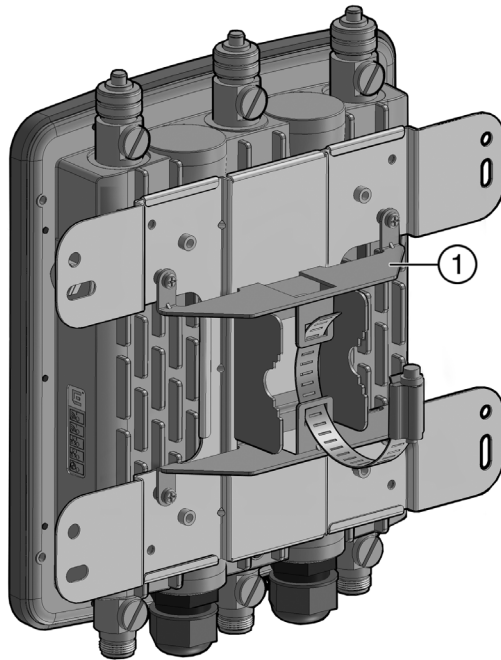
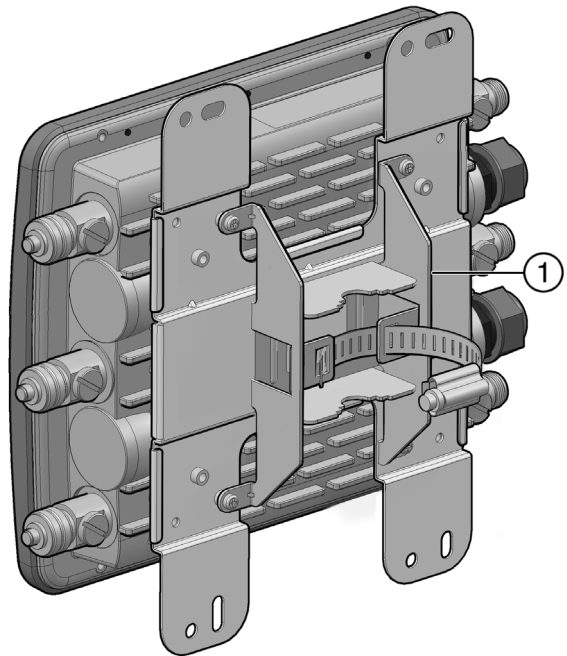
Figure 2-3 Mounting the WS-AP3865e to a Wall



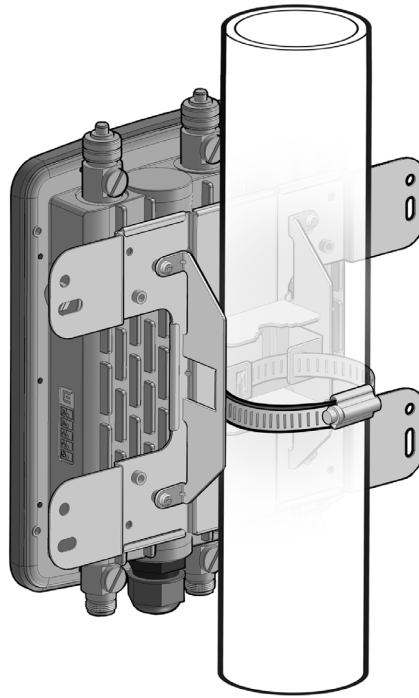
Mounting the WS-AP3865e to a Pole

To fit the mounting plate to a pole:

1. Position the pole mount bracket (see item 1, [Figure 2-4](#)) onto the AP mounting bracket in either the horizontal or vertical position.

Figure 2-4 Pole Mount Orientation**Horizontal Pole Orientation****Vertical Pole Orientation**

2. Secure the pole mount bracket to the AP mounting bracket using four M4 screws.
3. Tighten the four screws to a torque of 12.0 in-lbs.
4. Secure the AP to the pole by tightening the stainless steel tie back strap (see [Figure 2-5](#)).

Figure 2-5 .WS-AP3865e Pole Mount Option - Vertical Position

Attaching Antennas



Notes: The total number of required antennas and associated port locations on the WS-AP3865e is dependant on the coverage area and the type of antennas selected.

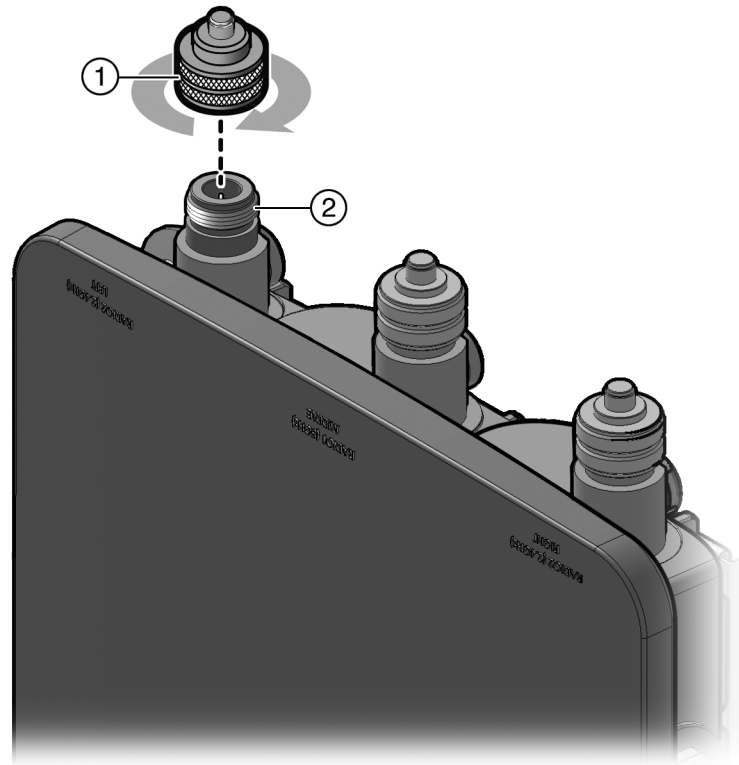
To attach external antennas to the WS-AP3865e:

1. Connect an LMR cable (with Reverse Polarity Type-N plugs on both ends) to an antenna connector on the WS-AP3865e (see [Figure 1-2](#) on page 1-2 and [Figure 1-2](#) on page 1-2).



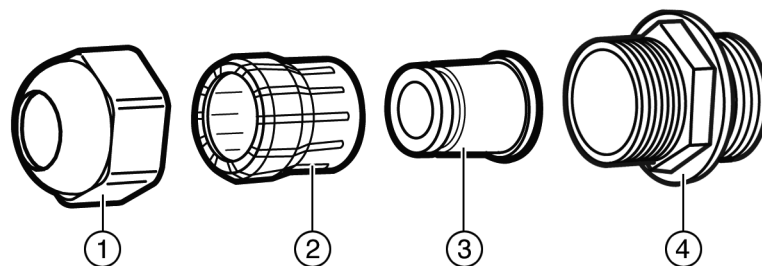
Note: The following antennas do not require an LMR cable and can be directly connected to the WS-AP3865e: WS-AO-DT05120-1, WS-AO-DX13025, and WS-ANT21. See “[Separately Ordered Components](#)” on page 2-2, for a complete list of available antennas and cables.

2. Connect the antenna to the LMR cable.
3. Place a terminator cap on any antenna connector(s) that will not be used (see [Figure 2-6](#) on page 2-8).

Figure 2-6 Installing Terminator Caps**1** Terminator cap**2** Antenna connector

LAN 1/LAN 2 Connections

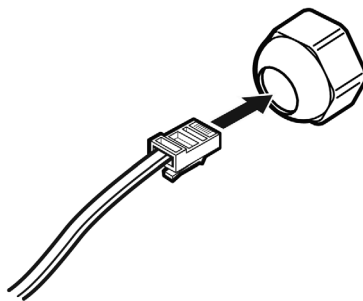
The WS-AP3865e has two LAN ports (LAN 1 and LAN 2). Refer to [Figure 1-2](#) on page 1-2 for the location of these ports. Before connecting an RJ45 cable (not provided) to either port, a waterproof cable gland adapter assembly must be installed onto the cable (see [Figure 2-7](#)).

Figure 2-7 RJ45 Cable Gland Adapter Assembly**1** Sealing nut**2** Claw**3** Seal**4** Main body

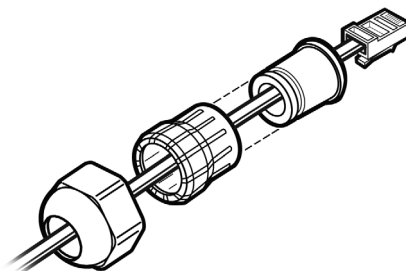
Installing the Cable Gland Adapter Assembly

Install the cable gland adapter assembly onto LAN 1 or LAN 2 as follows:

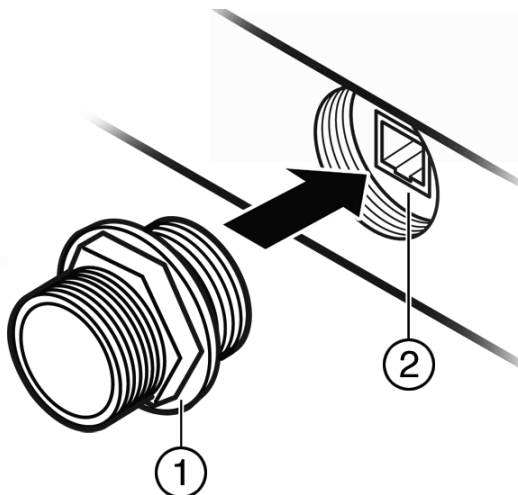
1. Insert the RJ45 cable onto the sealing nut.



2. Slide the claw and seal onto the RJ45 cable.



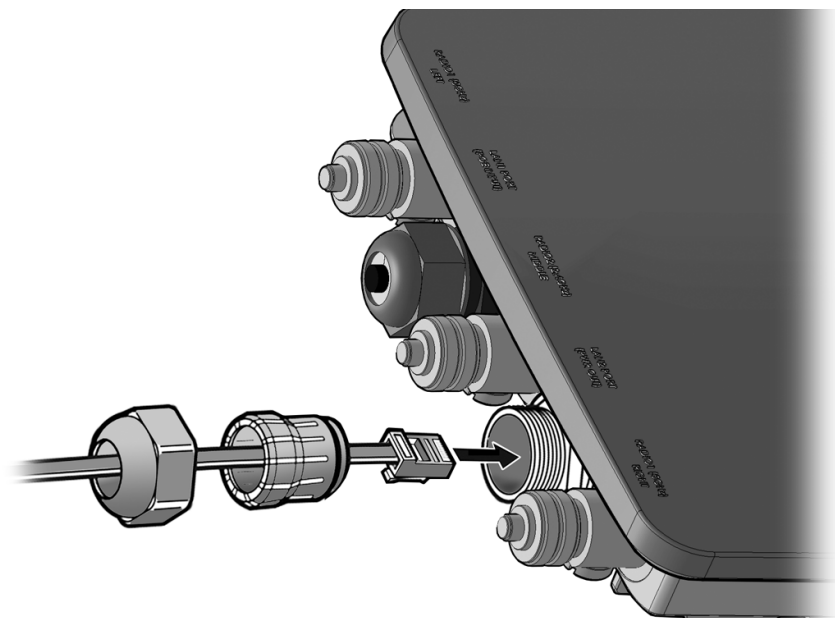
3. Screw the main body into the port of the WS-AP3865e.



1 Main body

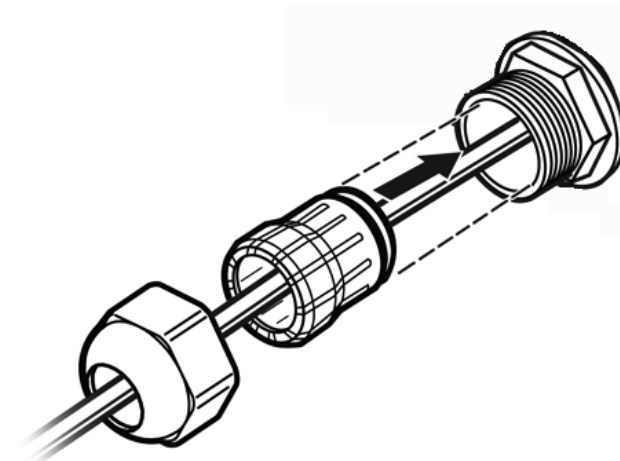
2 LAN 1 or LAN 2 Port

4. Plug the RJ45 cable into the port.

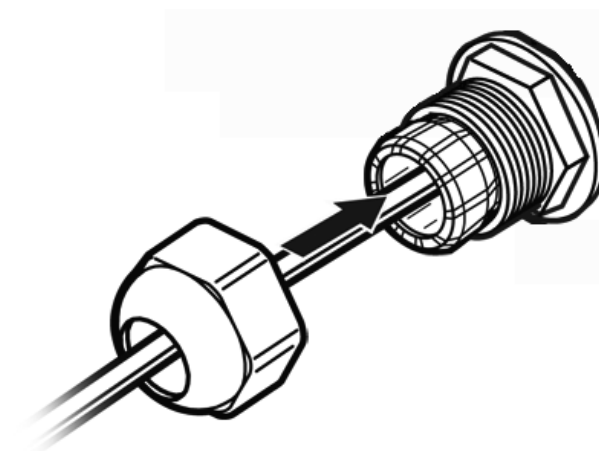


Caution: Do not run the network cable through the cable conduit connector used for connecting the power cables. You must connect the network cable and power cables through separate connectors.

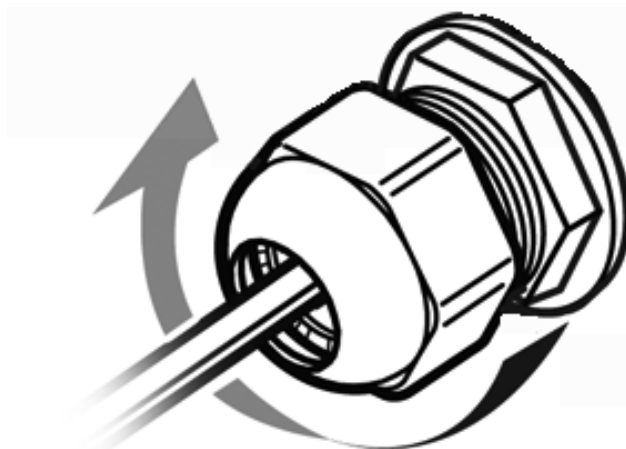
5. Slide the seal and claw into the main body.



6. Secure the seal nut onto the main body.



7. Tighten the assembly by hand. Tighten the cap to 10 inch-pounds (shown below).



Weatherproofing the AP3865e Connections

Extreme Networks recommends that all connections between the AP and antennas are weatherproofed using one of the following weatherproof kits (not supplied):

- Wireless Weatherproofing Kits:

- 3M (WK-100)
- Scotch (WK-101)

Each weatherproofing kit includes 3/4 inch vinyl tape, 2 inch mastic tape, and 2 inch vinyl tape.

- Cold Shrink Kits:

- 3M Cold Shrink Sealing Kit CXS (CXS-4).
- 3M Cold Shrink EDPM Connector Insulator (8426-9M)

The cold shrink kit includes one tube of vinyl mastic, and 2 inch mastic tape.

Weatherproofing the LAN1 and LAN2 glands

Extreme Networks recommends that all glands be torqued properly to avoid AP failure due to weather damage due to moisture. The following guidelines should be followed to ensure proper installation:

- Both the glands must be torqued properly to 10 inch-pounds.
- Care should be taken to ensure that no areas around the glands are exposed.



Caution: Failure to torque your glands properly leads to corrosion by salt and ice-melt deposits. Loosened glands will result in moisture damage and AP failure.

Weatherproofing the Antenna

The following guidelines should be followed to ensure proper installation:

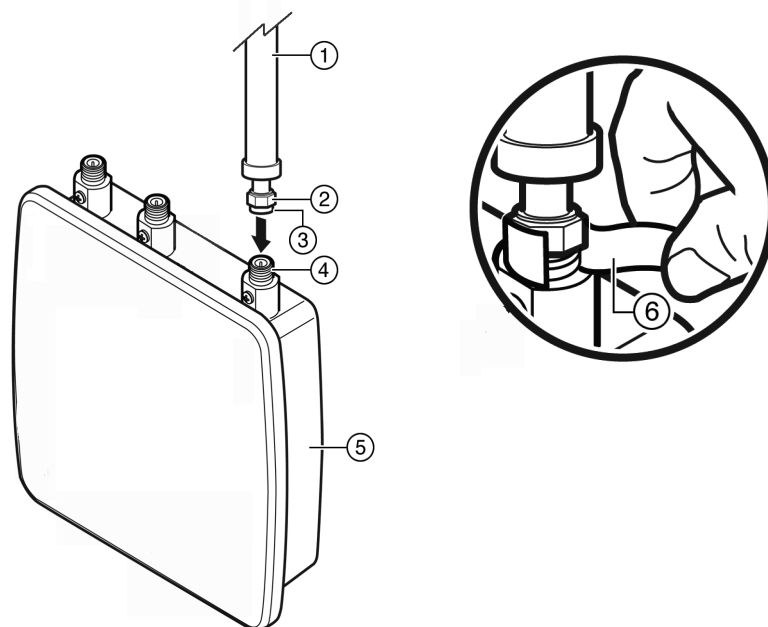
- The weatherproofing tape must be wound tightly over the connectors.
- Care should be taken to ensure that no areas around the edges are exposed.



Note: Installation instructions are provided with each Weatherproofing Kit and are included here for reference only.

Figure 2-8 shows how to wrap the antenna mounted directly to the AP3865e.

Figure 2-8 Weatherproofing the AP3865 Antenna



- | | | | |
|---|-------------------------------|---|--|
| 1 | Antenna | 4 | Standard polarity Type-N jack |
| 2 | Nut | 5 | AP3865e |
| 3 | Standard polarity Type-N plug | 6 | Sealing tape (recommended, but not supplied) |

To weatherproof the antenna (refer to [Figure 2-8](#)):

1. Secure the antenna in place by tightening the single nut (item 2).
2. Seal the connection between the Type-N jack (item 4) of the AP3865e and the Type-N plug (item 3) of the antenna by wrapping a layer of sealing tape (item 6).

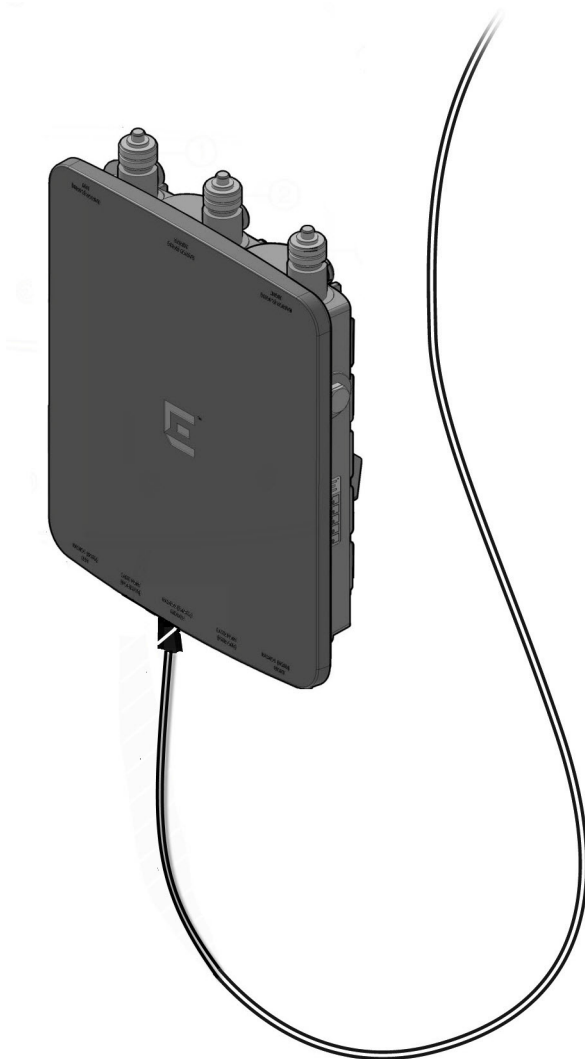
Forming a Drip Loop for AP3865e Cables

Once the cables have been connected to the AP and the connections have been weatherproofed, gather each cable below the AP, and form a drip loop as show in [Figure 2-9](#).



Note: The drip loop prevents water from entering the AP by channeling water down and away from the connection points. Drip loops are required to ensure proper operation of the AP.

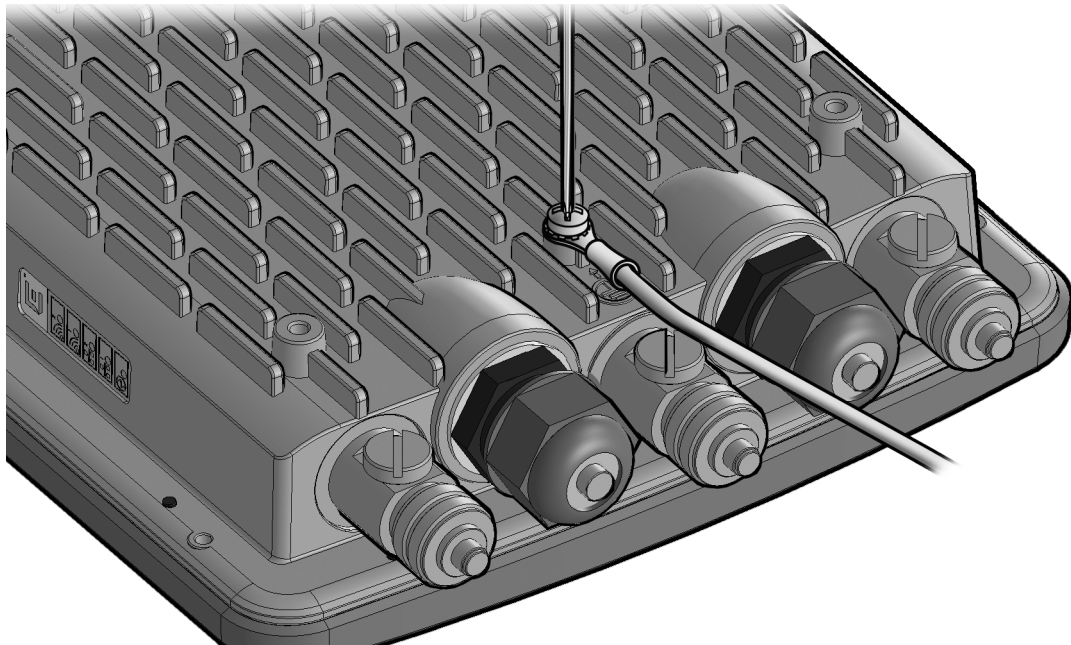
Figure 2-9 Drip Loop for the WS-AP3865e



Ground Connection

1. The ground connection for the WS-AP3865e is located on the rear of the device. Attach a ground to earth cable to the grounding terminal (see [Figure 2-10](#)) using one ground screw.
2. Tighten the screw to a torque of 12.0 in-lbs.

Figure 2-10 WS-AP3865e Ground Terminal Location





Specifications

This appendix lists the specifications for the IdentiFi Wireless Outdoor Access Point WS-AP3865e.

Table A-1 Specifications for the WS-AP3865e

| Item | Specification |
|--------------------------|---|
| Enclosure material | Metal enclosure IP67 rated |
| Power source | 802.3at compliant PoE |
| Power consumption | < 40W (Max.) |
| Antenna | 6x RP-N Jack antenna connectors; 2.4GHz x 3, 5GHz x 3, 6x antenna terminator caps |
| Uplink Interface | GbE Ethernet x1 with PoE |
| RoHS compliant | Yes |
| Radio Configuration | IEEE 802.11a/b/g/n, 2.4/5GHz dual-band; Dual-radio, 3x3 MIMO |
| Water/Dust Proof Ratings | NEMA Type 6 |
| Operating temperature | -40° C to +70° C (upper temperatures includes solar load and elevation) |
| Altitude (feet) | Operating: 10,000 Non-Operating: 50,000 |
| Relative Humidity (% RH) | Operating: 0%-95% (non-condensing) Non-Operating: 0%-95% (condensing allowed on the outside packaging) |
| Wind | Up to 150Mph |

Regulatory Information



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

This appendix provides regulatory information for the WS-AP3865e.



Notes: Specific AP models are only identified in this appendix where it is necessary to do so.



Warning: Changes or modifications made to the WS-AP3865es 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.



Note: The WS-AP3865es are in compliance with the European Directive 2002/95/EC on the restriction of the use of certain hazardous substances (RoHS) in electrical and electronic equipment.

WS-AP3865e

The following regulatory information applies to the WS-AP3865e.

WS-AP3865e External Antenna AP

Approved external antennas

The WS-AP3865e must only be used with certified external antennas. Any unused antenna ports must be terminated.

For a list of approved external antennas, see "[WS-AP3865e Approved External Antennas](#)" on page B-11.

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 (2.4 GHz)
- CFR 47 Part 15.407, Subpart E (5 GHz)

Other

- IEEE 802.11a (5 GHz)
- IEEE 802.11b/g (2.4 GHz)
- IEEE 802.11n (WS-AP3660)
- IEEE 802.3af (PoE)



Warning: The WS-AP3865es 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 WS-AP3865e 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 WS-AP3865e 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 WS-AP3865e 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 38 cm between the radiator and your body or other co-located operating antennas.

External Antennas

The external antennas used with the WS-AP3865e must be approved and certified before use. However, in order to comply with the local laws and regulations, an approval may be required by the local regulatory authorities.

For a list of approved external antennas, see “[WS-AP3865e Approved External Antennas](#)” on page B-11.

RF safety distance

The antennas used for this transmitter must be installed to provide a separation distance of at least 38 cm from all persons and must not be co-located or operating in conjunction with another antenna or transmitter.

Professional Installation Notice

To comply with FCC part 15 rules in the United States, the system must be professionally installed to ensure compliance with the Part 15 certification. It is the responsibility of the operator and professional installer to ensure that only certified systems are deployed in the United States. The use of the system in any other combination (such as co-located antennas transmitting the same information) is expressly forbidden.

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 numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur: “Appareils Numériques,” NMB-003 édictée par le Industrie Canada.

This device complies with Part 15 of the FCC Rules and Canadian Standard RSS-210. 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.
- Please note that high power radars are allocated as primary users (meaning they have priority) and can cause interference in the 5250-5350 MHz and 5470-5725 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.

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 5GHz)

Other

- IEEE 802.11a (5 GHz)
- IEEE 802.11b/g (2.4 GHz)
- IEEE 802.11n (WS-AP3660)
- IEEE 802.3af (PoE)

External Antennas

The external antennas used with the WS-AP3865e must be approved and certified before use. However, in order to comply with the local laws and regulations, an approval may be required by the local regulatory authorities.

For a list of approved external antennas, see [“WS-AP3865e Approved External Antennas”](#) on page B-11.

RF Safety Distance

The antennas used for this transmitter must be installed to provide a separation distance of at least 38 cm from all persons and must not be co-located or operating in conjunction with another antenna or transmitter.

European Community

The WS-AP3865es are 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 WS-AP3865e for operation by entry of a country code relative to a specific country. After the country code is selected, the WS-AP3865e will use the proper frequencies and power outputs for that country code.

The WS-AP3865e is intended for outdoor use and must be installed in a proper outdoor 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 lýsir her með yfir að thessi bunadur, Radio LAN device, uppfyllir allar grunnkröfur, sem gerðar eru í 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 oħrajn rilevanti li hemm fid-Direttiva 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 alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak. |
| 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 (WS-AP3660)
- IEEE 802.3af (PoE)

RoHS

- European Directive 2002/95/EC

External Antennas

The external antennas used with the WS-AP3865e must be approved and certified before use. However, in order to comply with the local laws and regulations, an approval may be required by the local regulatory authorities.

For a list of approved external antennas, see [“WS-AP3865e Approved External Antennas”](#) on page B-11.

RF safety distance

The antennas used for this transmitter must be installed to provide a separation distance of at least 38 cm from all persons and must not be co-located or operating in conjunction with another antenna or transmitter.

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 WS-AP3865e must not be operated until properly configured for the customer's geographic location.



Caution: The user or installer is responsible to ensure that the WS-AP3865e 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 properly configure the WS-AP3865e.

- 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 WS-AP3865e is properly configured.
- The software within the Wireless AP will automatically limit 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 5 GHz Turbo Mode feature is not enabled for use on the WS-AP3865es.
- The 5150- 5350 MHz band, channels 36, 40, 44, 48, 52, 56, 60, or 64, are restricted to indoor use only.
- The external antenna APs must only use antennas that are certified by Extreme Networks.
- The 2.4 GHz band, channels 1 - 13, may be used for indoor or outdoor use but there may be some channel restrictions.
- In Greece and Italy, the end user must apply for a license from the national spectrum authority to operate outdoors.
- In France, outdoor operation is not permitted using the 2.4 - 2.454 GHz band.

European Spectrum Usage Rules

The AP configured with approved internal or external antennas can be used for indoor and outdoor transmissions throughout the European community as displayed in [Table B-1](#). Some restrictions apply in Belgium, France, Greece, and Italy.

Table B-1 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 only |
| 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 |
| 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 |

Table B-1 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) |
|-------------|---|---|--|---|
| 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 |



Note: * Belgium requires notifying the spectrum agency if deploying > 300 meter wireless links in outdoor public areas.

Certifications of Other Countries

The WS-AP3865es have 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 the device will be operated within or run the risk violating local laws and regulations.

Approved External Antennas

The external antenna WS-AP3865es can also be used with certified external antennas. However, in order to comply with the local laws and regulations, an approval may be required by the local regulatory authorities.

For a list of approved external antennas, see “[WS-AP3865e Approved External Antennas](#)” on page B-11.

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 (AP3630, WS-AP3660)
- IEEE 802.3af (PoE)

WS-AP3865e Approved External Antennas

The WS-AP3865e external antenna AP can be used with certified external antennas. However, in order to comply with the local laws and regulations, an approval may be required by the local regulatory authorities. The optional antennas listed in [Table B-2](#) have been tested and approved for use with the external antenna model.

This device has been designed to operate with the optional antennas listed below, and having a maximum gain of 23 dB. Antennas not included in this list or having a gain greater than 23 dB are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

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 required for successful communication.

Table B-2 List of Approved Antennas - WS-AP3865e

| Model | Application | Shape | Gain (dBi) | Band (GHz) | Connector Type |
|-----------------|-------------|--|------------|-----------------------|---|
| WS-AO-DT05120N | Outdoor | 120 degree, sector, triple-feed, MIMO | 5 | 2.3-2.7 4.9-6.1 | Standard Polarity, Type-N Plug |
| WS-AO-5D23009N | Outdoor | 9 degree, panel, dual polarization, point-to-point | 23 | 5.15-5.875 | Standard Polarity, Type-N Plug (includes two, five foot adapter cables) |
| WS-AO-DX13025N | Outdoor | 27/30 degree, panel, six-feed | 12 11 | 2.4-2.5 5.15-5.875 | Standard Polarity, Type-N Plug |
| WS-AO-DX10055N | Outdoor | 55 degree, panel, six-feed | 9 8 | 2.4-2.5 5.15-5.875 | Standard Polarity, Type-N Plug |
| WS-AO-DS02360N3 | Outdoor | Omni baton, single feed, 3 pack | 2 | 2.4-2.5 5.15-5.875 | Standard Polarity, Type-N Plug |
| WS-AO-2DIPN3 | Outdoor | Dipole, 3 pack | 5 | 2.4 | Standard Polarity, Type-N Plug |
| WS-AO-5DIPN3 | Outdoor | Dipole, 3 pack | 7 | 5.0 | Standard Polarity, Type-N Plug |
| WS-AO-DX07180N | Outdoor | 180 degree, panel, six feed | 7 | 2.4-2.5 5.15-5.875 | Standard Polarity, Type-N Plug (with six, five foot adapter cables) |

RF Safety Distance

The antennas used for this transmitter must be installed to provide a separation distance of at least 38 cm from all persons and must not be co-located or operating in conjunction with another antenna or transmitter.

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