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# WLA532 Access Point Hardware Documentation



Published: 2011-09-29  
Revision

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Revision History  
September 2011—Revision 1; initial release

The information in this document is current as of the date listed in the revision history.

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## PART 1

# Overview

- [Access Point Overview on page 3](#)
- [Ports and Connectors on page 7](#)

## CHAPTER 1

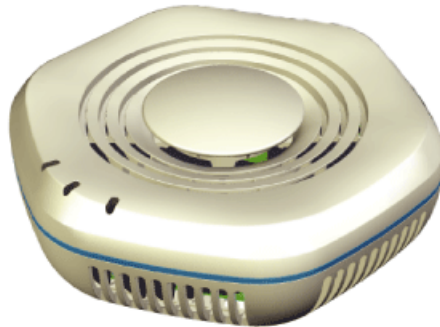
# Access Point Overview

- [WLA532 AccessPoint Hardware Overview on page 3](#)
- [MAC Address Information for WLA Series Access Points on page 4](#)

## WLA532 AccessPoint Hardware Overview

Juniper Networks Enterprise wireless LAN Indoor Access Point, WLA532, is based on the next evolution of 802.11n technology based radio chipsets. WLA 532 is a dual radio 3X3 multiple input, multiple output (MIMO) access point supporting up to three spatial streams on each radio. WLA532 is a compact hexagon shaped access point and is targeted at enterprise customers including verticals such as Healthcare, Education and other carpeted offices.

Figure 1: WLA532 Access Point



**NOTE:** The WLA532 requires only hardware installation. All configurations for the access point is done on the wireless LAN controllers.

The WLA532 access point supports:

- In band spectrum monitoring and network spectrum mitigation
- Minimum 450Mbps or 500 Mbps (? to be clarified during review) to wire from two radios at large packets
- One 2.4GHz 3x3 802.11n standard power radio subsystem



- One 5GHz 3x3 802.11n enhanced power radio subsystem
- One Gigabit (10/100/1000 Base-T) Ethernet port
- Power consumption within standard 802.3af power on GigE port
- Spectrum Analysis
- Hardware (DTLS) crypto acceleration for CAPWAP data path
- 3 spatial stream operation
- Rate Adaptation features (3SS rates, 2SS rates and 1SS rates)

The WLA532 can be powered up and operational within 3 minutes and supports all features of RingMaster and Mobility System Software (MSS).

The following wireless LAN controllers are supported by the WLA532 access point:

- WLC2 Wireless LAN Controller
- WLC8 Wireless LAN Controller
- WLC800 Wireless LAN Controller
- WLC880 Wireless LAN Controller
- WLC2800 Wireless LAN Controller

#### Related Documentation

- [General Safety Standards and Agencies for the WLA532 Access Point on page 25](#)
- [Installing the WLA532 Access Point on a Suspended Ceiling Rail on page 33](#)
- [Installing the WLA532 Access Point on a Wall on page 36](#)

## MAC Address Information for WLA Series Access Points

The WLA series access points are assigned a unique block of 64 MAC addresses (reviewers, please confirm?). Each radio has 32 MAC addresses and hence can support up to 32 SSIDs, with one MAC address assigned to each SSID as a BSSID. The access point MAC address block is listed on a label on the back of the access point. If the access point is already deployed and running on the network, you can display the MAC address assignments by using the **show ap status** command using the Mobility System Software CLI. All MAC addresses for an access point are assigned based on the base MAC address of the access point as described in Table.

**Table 1: MAC Address Information for WLA Series Access Points**

MAC Address Type	Description
Access Point base MAC Address	The access point has a base MAC address. All the other addresses are assigned based on this address
Ethernet Port MAC Addresses	<ul style="list-style-type: none"> <li>• Ethernet port 1 equals the access point base MAC address</li> <li>• Ethernet port 2 equals the access point base MAC address + 1 (Not applicable for WLA532 series).</li> </ul>

Table 1: MAC Address Information for WLA Series Access Points (*continued*)

MAC Address Type	Description
5Ghz Radio and SSID MAC Addresses	<ul style="list-style-type: none"> <li>The 5Ghz radio equals the access point base MAC address + 1</li> <li>The BSSIDs for the SSIDs configured on the 5Ghz radio end in odd numbers. The first BSSID is equal to the access point's base MAC address + 1. The next BSSID is equal to the access point's base MAC address + 3, and so on.</li> </ul>
2.4Ghz Radio and SSID MAC Addresses	<ul style="list-style-type: none"> <li>The 2.4Ghz radio equals the access point base MAC address</li> <li>The BSSIDs for the SSIDs configured on the 2.4Ghz radio end in even numbers. The first BSSID is equal to the access point base MAC address. The next BSSID is equal to the access point base MAC address + 2, and so on.</li> </ul>

- Related Documentation**
- [Radio Requirements for 2.4GHz on page 19](#)
  - [Radio Requirements for 5GHz on page 19](#)

## CHAPTER 2

# Ports and Connectors

- [Ethernet Connections for WLA532 Access Points on page 7](#)
- [Status LEDs on WLA532 Access Point on page 7](#)

## Ethernet Connections for WLA532 Access Points

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The WLA532 access point has one RJ-45 network port, which provides a 10/100/1000 autosensing (MDI/MDX) ethernet connection to a wireless LAN controller (WLC).

You can configure the connection between the access point and the controller either as a direct connection or as an indirect connection through an intermediate layer 2 or layer 3 network. The WLA532 access point receives power and data through the RJ-45 port. You use a Category 5 cable with straight-through signaling and standard RJ-45 connectors to connect the access point to a controller or to a switch in the network. The access point supports Power over Ethernet (IEEE 802.3af). It can also receive PoE power from Juniper Networks wireless LAN controllers and Juniper Networks–approved power injectors.



**NOTE:** The access points do not support daisy-chain configurations. Do not connect one access point to another access point.

### Related Documentation

- [Connecting the Access Point to Wireless LAN Controllers on page 39](#)
- [Standard PoE Information for WLA Series Access Points on page 14](#)

## Status LEDs on WLA532 Access Point

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The WLA532 access point has three status LEDs that indicate status information in green, amber, and red colors.

Figure 2: Status LED on WLA532 Access Point

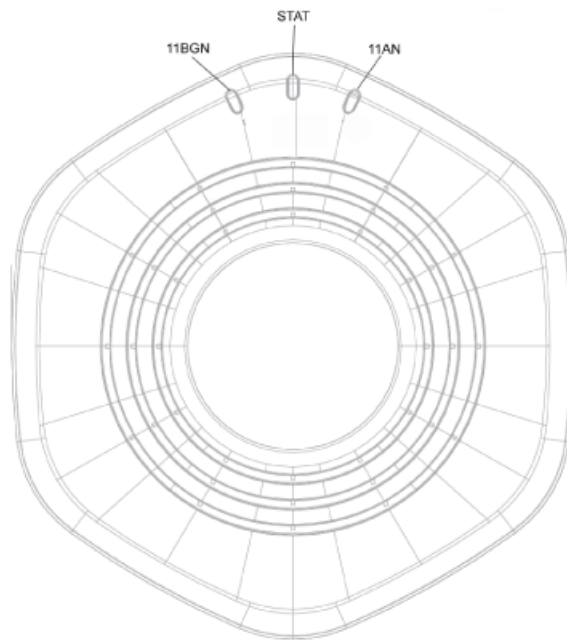


Table 2 on page 8 describes the status LEDs and their states.

Table 2: Status LEDs on WLA532 Access Points

Label	Color	Status and Description
LED in the center	Unlit	Off. The access point is powered off.
	Amber, flashing	On. The access point is on power on sand is in self-test mode.
	Green, flashing	On. The access point is waiting to receive boot instructions and a configuration file from a wireless LAN controller.  Cindy, the products are named as WLC2, WLC8 etc. So, is it okay to just say WLC? Or should we use wireless LAN controller always?)
	Green or amber, flashing	On. The access point is booting and receiving a configuration file from the controller. After the access point boots and receives a configuration file, the LED continues to flash alternately green and amber until a radio is enabled.
	Green	On. The access point is powered on and is operational.
	Red	On. The access point has not been configured and is not operational.

Table 2: Status LEDs on WLA532 Access Points (*continued*)

Label	Color	Status and Description
LED on the right (11 AN)		Off. The 5 GHz radio is disabled.
	Green	On. The 5 GHz radio is enabled.
	Amber	On. Dedicated sensor <span style="border: 1px solid red; padding: 2px;">Please clarify what is dedicated sensor</span>
	Green or amber, flashing	On. The access point is transmitting and receiving on the 5 GHz radio.
	Red	On. The radio has failed.
LED on the left (11 BGN)		Off. The 2.4 GHz radio is disabled.
	Green	On. The 2.4 GHz radio is enabled.
	Amber	On. Dedicated sensor
	Flash Green or Amber	On. The access point is transmitting and receiving on the 2.4GHz radio.
	Red	On. The radio has failed.

- Related Documentation**
- [Ethernet Connections for WLA532 Access Points on page 7](#)
  - [Radio Requirements for 2.4GHz on page 19](#)
  - [Radio Requirements for 5GHz on page 19](#)

## PART 2

# Planning

- [Planning Guidelines on page 13](#)
- [Radio Requirements on page 19](#)
- [Certifications on page 21](#)

## CHAPTER 3

# Planning Guidelines

- [Planning Guidelines for Using RingMaster to Plan a Mobility System on page 13](#)
- [Standard PoE Information for WLA Series Access Points on page 14](#)
- [Technical, Mechanical and Compliance Specifications for WLA Series Access Points on page 14](#)

## Planning Guidelines for Using RingMaster to Plan a Mobility System

The Juniper Networks Mobility System is an enterprise WLAN solution that seamlessly integrates with an existing wired enterprise network. The Juniper Networks system provides secure connectivity to both wireless and wired users in large environments such as office buildings, hospitals, and university campuses. The Juniper Mobility System fulfills the three fundamental requirements of an enterprise WLAN: it eliminates the distinction between wired and wireless networks, allows users to work safely from anywhere (secure mobility), and provides a comprehensive suite of intuitive tools for planning and managing the network before and after deployment, greatly easing the operational burden on IT resources.

If you are using RingMaster to plan your Mobility System installation, we recommend that you create and verify a network plan for the entire installation and generate an wireless LAN access point (WLA) work order before installing the recommended WLAs. A network plan and the WLA work order generated from RingMaster provide the following information about WLA installation and configuration:

- Number of WLAs required for adequate wireless LAN (WLAN) capacity in each coverage area.
- Detailed installation-location for each WLA.
- Settings for all WLAs in the WLAN.

Once your plan has been created and reviewed, you can arrange for the WLAN network installation. System Administrators and anyone involved in the installation of the WLAN System are responsible for the proper setup and operation in accordance to all rules and regulations of the country in which the equipment operates.

### **Related Documentation**

- [Configuring the WLCs With RingMaster](#)

## Standard PoE Information for WLA Series Access Points

The WLA series access point operates as a powered device within standard IEEE 802.3af Power over Ethernet (PoE) from either a mid or end span power source equipment. It also operates on 802.3af+ (54V from power source equipment) or 802.3at (high power POE), and WLA532 responds to 802.3at discovery as an 802.3af class 3 device. The WLA series access point POE circuitry operates at 85% or greater efficiency on a 40 V 350ma 14W input (dissipate less than 3.0W).

The WLA532 access point provides a PoE input circuit to the CPU to indicate if the powered device input voltage is less than 42 V or not. This helps to identify poor quality cable plants or power source equipment capability and allows the software to disable some of the features.

### Related Documentation

- [Ethernet Connections for WLA532 Access Points on page 7](#)

## Technical, Mechanical and Compliance Specifications for WLA Series Access Points

This section explains the technical, mechanical, and compliance specifications for WLA series access points.



**NOTE:** For detailed compliance information see the *Juniper Networks Regulatory Guide* located at: <http://www.juniper.net/> and can be downloaded in PDF format.



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

## 802.11 a/b/g/n Features

The WLA532 access points supports:

- High performance 11 Mbps (802.11b) or 54Mbps (802.11a/g) or 300Mbps(802.11n) data rate
- Wi-Fi, WPA certificated interoperability
- WPA/WPA2 with PSK/802.1x with TKIP/AES
- 40-bit and 128-bit WEP
- Seamless roaming within the IEEE 802.11 a/b/g/n WLAN infrastructure.
- Adjustable output power support
- Interoperability with Juniper Networks Wireless Security Switch



- Single auto-sensing 10/100/1000 Ethernet port, configured as MDI
- Comply with IEEE 802.3, 802.3u and 802.3ab standards
- PowerDsine(Microsemi) GigE PoE injector support
- 802.3af PoE compatability

### Ceiling and Wall Mounting

The WLA 532 access point can be mounted to a recessed 15/16” ceiling tile rail without disrupting rail or tile alignment. The WLA532 access point hardware will be provided with the following mounting adapters provided in an auxiliary mounting kit:

- 9/16” recessed ceiling tile rail adapter
- Center tile mount adapter and wall mount adapter
- Trapeze legacy mounting bracket adapter (Reviewers, is this required?)
- North America single gang wall box adapter (minimum extension from wall, covers wall box and cables)
- European Union single gang wall box adapter

### Mechanical and Compliance Specifications

The mechanical and compliance specifications for WLA532 access point is listed in the table

**Table 3: Mechanical and Compliance Specification for WLA532**

Specification	Description
Size	Length: 14 centimeters (5.5 inches) Width: 13.15 centimeters (5.1 inches) Height: 5.3 centimeters (2 inches)
Weight	Without mounting bracket: 264 grams (9.31 ounces)
Operating Temperature	0° C to 50° C (32° F to +122° F)
Storage Temperature	-40° C to +70° C (-40° F to +158° F)
Humidity	5% to 95% non-condensing
MTBF	? years ? (Reviewers, please confirm)
RoHs/ IEEE	Directive 2002/95/EC, 2006/122/EC China RoHS (?0
Power over Ethernet (PoE)	40 V to 54 V IEEE 802.3af

Table 3: Mechanical and Compliance Specification for WLA532 (continued)

Specification	Description
Status indicators	Health/status and radio LEDs (For descriptions of the LEDs, see <a href="#">"Access Point LEDs in a WLA 532"</a> on page 7.
Wired network ports	One RJ-45 port for 10/100/1000BASE-T Ethernet and Power over Ethernet (PoE)
Standards compliance	IEEE 802.11 IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.3af IEEE 802.11n
Safety and electromagnetic compliance	CAN/CSA-C22.2 No. 60950-1 Information Technology Equipment UL 60950-1 (2nd Ed.) Information Technology Equipment EN 60950-1 Information Technology Equipment IEC 60950-1 Information Technology Equipment - Safety (All country deviations) EN 60601-1-1 General Safety for medical electrical systems Low Voltage Directive 2006/95/EEC IEEE 802.3at POE requirements
radio compliance	FCC CFR 47, Part 2 Frequency allocations and general treaty matters, General rules FCC CFR 47, Part 15 Radio Frequency Devices - EN 300 328 EMC and Radio Spectrum Matters 2.4GHz ISM band EN 301 489-1 EMC and Radio Spectrum Matters: Common Technical requirements EN 301 489-17 EMC and Radio Spectrum Matters: 2.4GHz wideband and 5GHz RLAN EN 301 893 Broadband Radio Access Networks 5 GHz RLAN RTTE Directive 1995/5/EC Various Country Specific Radio Regulations
Encryption	Wi-Fi Protected Access (WPA/WPA2) Advanced Encryption Standard (AES) 40-bit/104-bit Wired-Equivalent Privacy (WEP)

Table 3: Mechanical and Compliance Specification for WLA532 (*continued*)

Specification	Description
General	Power-save mode supported Transmit power control in 1 dBm increments Supports up to 250 clients per radio Supports Dynamic Frequency Selection

## Radio Specifications

The mechanical and compliance specifications for WLA532 access point is listed in the table.

Table 4: Radio Specification for WLA532

Specification	Description
Antenna type	Integrated diversity omnidirectional Internal 3X3 Multiple Input Multiple Output (MIMO)
Antenna gain	Internal: 2-3 dBi (2.4 GHz) Internal: 4-5 dBi (5 GHz)
Frequency band	2.4 GHz to 5 GHz based on country regulations
Operating channels	Based on the country of operation specified by the system administrator
Association rates	802.11n rates: MCS 0 to MCS 23
Modulation	Orthogonal frequency division multiplexing (OFDM)
Transmit power	18 dBm transmit power per chain (200mW combined 3-stream output power) and -90dBm receive sensitivity at MCS0 data rate  12 dBm transmit power per chain (50mW combined 3-stream output power) and -70dBm receive sensitivity at MCS23 data rate.

## CHAPTER 4

# Radio Requirements

- [Radio Requirements for 2.4GHz on page 19](#)
- [Radio Requirements for 5GHz on page 19](#)

## Radio Requirements for 2.4GHz

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The 2.4 GHz band mPCIe radio module is operational from channels 1 to 14 of legacy 802.11 bg or in 802.11 n 3x3 stream of 20 MHz channel modes. At MCS0 data rate, it provides 18 dBm transmit power per chain (200 mW combined 3-stream output power) and -90 dBm reception. With MCS23 data rate, it provides 12dBm transmit power per chain (50 mW combined 3-stream output power) and -70 dBm reception. It consumes less than 2.75 W at maximum power draw.

Reviewers, please clarify the performance details.

The 2.4 GHz horizontally polarized antenna model of WLA532 access point includes one 2.4GHz band, 2 dBi gain, omnidirectional, horizontally polarized internal antenna, which maximizes the MIMO performance from 2dBi to -4dBi around the 360 degrees horizontal plane.

The 2.4 GHz vertically polarized antenna model of WLA532 access point includes two 2.4 GHz band, 3 dBi gain, 5 degree down-tilt omnidirectional, vertically polarized internal antenna, which maximizes the MIMO performance from 3dBi to -9dBi around the 360 degrees horizontal plane.

### Related Documentation

- [Radio Requirements for 5GHz on page 19](#)

## Radio Requirements for 5GHz

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The 5 GHz band mPCIe radio module is operational from channels 36 to 165 in legacy 802.11 a or 802.11 n 3x3 stream of 20 MHz and 40MHz channel modes. At MCS0 data rate, it provides 18 dBm transmit power per chain (200 mW combined 3-stream output power) and -90dBm reception. With MCS23 data rate, it provides 12dBm transmit power per chain (50 mW combined 3-stream output power) and -67 dBm reception. It consumes less than 4.25 W at maximum power draw.

Reviewers, please clarify the performance details.

The 5 GHz horizontally polarized antenna model of WLA532 access point includes one 5 GHz band, 4 dBi gain, omnidirectional, horizontally polarized internal antenna, which maximizes the MIMO performance from 4dBi to -6dBi around the 360 degrees horizontal plane.

The 5 GHz vertically polarized antennas model of WLA532 access point includes two 5 GHz band, 5 dBi gain, 5 degree down-tilt omnidirectional, vertically polarized internal antenna, which maximizes the MIMO performance from 5 dBi to -7 dBi around the 360 degrees horizontal plane.

**Related  
Documentation**

- [Radio Requirements for 2.4GHz on page 19](#)

## CHAPTER 5

# Certifications

- [EMI/EMC Certifications for the WLA532 Access Point on page 21](#)
- [Radio Safety Certifications for the WLA532 Access Point on page 21](#)

### EMI/EMC Certifications for the WLA532 Access Point

For a complete list of safety warnings and detailed compliance information, see the Juniper Networks Regulatory Guide in the Wireless LAN Services (WLS) documentation at <http://www.juniper.net/techpubs/>.

EMI/EMC Certification for Juniper WLA532 access point-specified standards and agencies:

- FCC CFR 47, Part 2 Frequency allocations and general treaty matters, General rules
- FCC CFR 47, Part 15 Radio Frequency Devices (Class B)
- EN 55022 EMC Radiated Standard (Class B)
- EN 55024 EMC Immunity Standard (Class B)
- EN 300 386 EMC and Radio Spectrum Matters Telcom
- EN 60601-1-2 EMC for medical electrical equipment
- EMC Directive 2004/108/EC

#### **Related Documentation**

- [Radio Safety Certifications for the WLA532 Access Point on page 21](#)

### Radio Safety Certifications for the WLA532 Access Point

For a complete list of safety warnings and detailed compliance information, see the Juniper Networks Regulatory Guide in the Wireless LAN Services (WLS) documentation at <http://www.juniper.net/techpubs/>.

Radio certifications for Juniper WLA532 access point-specified standards and agencies:

- FCC CFR 47, Part 2 Frequency allocations and general treaty matters, General rules
- FCC CFR 47, Part 15 Radio Frequency Devices
- EN 300 328 EMC and Radio Spectrum Matters 2.4GHz ISM band

- EN 301 489-1 EMC and Radio Spectrum Matters: Common Technical requirements
- EN 301 489-17 EMC and Radio Spectrum Matters: 2.4GHz wideband and 5GHz RLAN
- EN 301 893 Broadband Radio Access Networks 5 GHz RLAN
- RTTE Directive 1995/5/EC
- Various Country Specific Radio Regulations and World Markings.

**Related  
Documentation**

- Safety Standards and Agencies

## PART 3

# Safety

- [General Safety Information on page 25](#)
- [General Guidelines on page 29](#)



## CHAPTER 6

# General Safety Information

- [General Safety Standards and Agencies for the WLA532 Access Point on page 25](#)
- [WLA532 Access Point Radio Frequency Exposure Guidelines on page 26](#)

### General Safety Standards and Agencies for the WLA532 Access Point

For a complete list of safety warnings and detailed compliance information, see the Juniper Networks Regulatory Guide in the Wireless LAN Services (WLS) documentation at <http://www.juniper.net/techpubs/>.

The following certifications are required to comply with WLA532 access point specified safety standards and agencies:

- CAN/CSA-C22.2 No. 60950-1 Information Technology Equipment - Safety
- UL 60950-1 (2nd Ed.) Information Technology Equipment - Safety
- EN 60950-1 Information Technology Equipment - Safety (All country deviations)
- EN 60601-1-1 General Safety for medical electrical systems
- Low Voltage Directive 2006/95/EEC
- IEEE 802.3at POE requirements
- UL 2043 plenum-rated
- RoHS - WLA532 product and manufacturing shall comply with EU RoHS 6 (Pb free), EU WEEE, and China RoHS

Country specific certifications and World Markings for Juniper-specified standards and agencies:

- North America - WLA532-US
- Israel - WLA532-IL
- The remainder of the world - WLA532-WW

#### **Related Documentation**

- [EMI/EMC Certifications for the WLA532 Access Point on page 21](#)
- [Radio Safety Certifications for the WLA532 Access Point on page 21](#)

## WLA532 Access Point Radio Frequency Exposure Guidelines

The following are Radio Frequency Exposure Guidelines for the WLA532 access point:

### WLA Radio Safety Advisories:

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

#### 802.11b/802.11g/BT警語：

第十二條→經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條→低功率射頻電機之使用，不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前項合法通信，指依電信法規定作業之無線電通信。

低功率射頻電機須忍受合法通信或工業、科學及醫用電波射性電機設備之干擾。

Article 12- Without permission granted by the NCC, any company, enterprise, or user is not allowed to change frequency, enhance transmitting power or alter original characteristic as well as performance to an approved low power radio-frequency devices.

Article 14- The low power radio-frequency devices shall not influence aircraft security and interfere legal communications; If found, the user shall cease operating immediately until no interference is achieved. The said legal communications means radio communications is operated in compliance with the Telecommunications Act. The low power radio-frequency devices must be susceptible with the interference from legal communications or ISM radio wave radiated devices.

#### 802.11a警語：Unlicensed National Information Infrastructure, U-NII

##### 4.7→無線傳輸設備(U-NII)

4.7.5→在5.25-5.35 GHz頻帶內操作之無線資訊傳輸設備，限於室內使用。

4.7.6→無線資訊傳輸設備忍受合法通信之干擾且不得干擾合法通信；如造成干擾，應立即停用，俟無干擾之虞，始得繼續使用。

4.7.7→無線資訊傳輸設備的製造廠商應確保頻帶穩定性，如依製造廠商使用手冊上所述正常操作，發射的信號應維持於操作頻帶中。

加印警語→「避免電波干擾，本器材禁止於室外使用5.25-

5.35 GHz頻帶」於器材使用說明書內，並將警語印製貼紙可黏貼於裝設器材機身外明處。

4.7.5- Within the 5.25-5.35 GHz band, U-NII devices will be restricted to indoor operations to reduce any potential for harmful interference to co-channel MSS operations.

4.7.6- The operation of the U-NII devices is subject to the conditions that no harmful interference is caused. The user must stop operating the device immediately should

harmful interference is caused and shall not resume until the condition causing the harmful interference has been corrected. Moreover, the interference must be accepted that may be caused by the operation of an authorized communications, or ISM equipment

4.7.7- Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user manual.

#### **B급 기기**

(가정용 방송통신기자재)

이 기기는 가정용(B급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

Translation: Class B (Broadcasting Communication Equipment for Home Use) As an electromagnetic wave equipment for home use (Class B), this equipment is intended to use mainly for home use and may be used in all areas.

#### **Related Documentation**

- [EMI/EMC Certifications for the WLA532 Access Point on page 21](#)
- [Safety Standards and Agencies](#)
- [Radio Safety Certifications for the WLA532 Access Point on page 21](#)

## CHAPTER 7

# General Guidelines

## PART 4

# Installation

- [Installing the Access Point on page 33](#)
- [Verification Tasks on page 41](#)

## CHAPTER 8

# Installing the Access Point

- [Installing the WLA532 Access Point on a Suspended Ceiling Rail on page 33](#)
- [Installing the WLA532 Access Point on a Wall on page 36](#)
- [Connecting the Access Point to Wireless LAN Controllers on page 39](#)

## Installing the WLA532 Access Point on a Suspended Ceiling Rail

The WLA532 access point is an indoor, dual-band, dual-concurrent 3x3 IEEE 802.11n enterprise WLAN access point with three data streams. You can install the WLA532 access point on the ceiling using the provided mounting bracket or on a junction box on a wall. Mounting the device on the ceiling is the primary installation method, and ceiling-mount installation steps are provided in this topic. You can purchase a junction box wall-mount kit separately and follow the wall-mounting instructions in the Wireless LAN Services (WLS) documentation at <http://www.juniper.net/techpubs/>.

The WLA532 access point package includes a bracket for mounting the access point to a recessed, 9/16-inch or 15/16-inch T ceiling-tile rail.

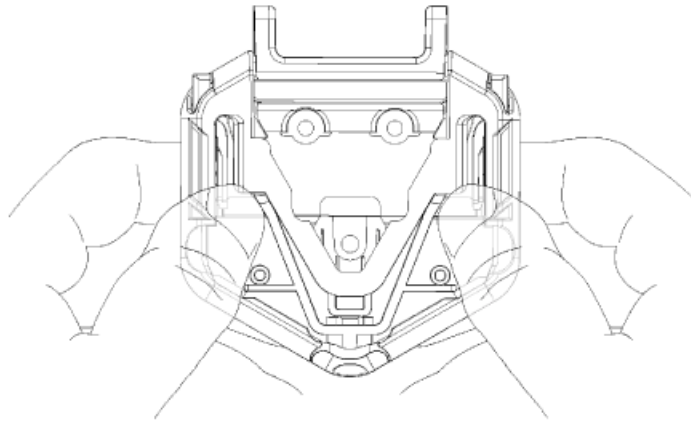
Ensure that you have the following parts and tools available to install the access point:

- Ceiling-mount bracket (provided)
- Category 5 cable, installed (not provided)
- Mounting template (provided)
- Box cutter or similar tool to cut ceiling tile (not provided)
- (Optional) Security kit (separately orderable), which includes a security tool and a security screw (not provided)

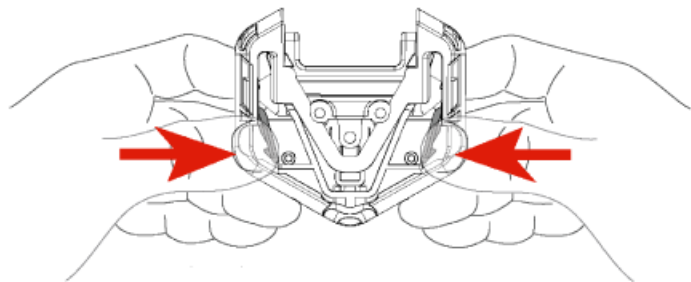
To install the access point on a suspended ceiling rail:

1. Select an installation location under a recessed rail in the ceiling.
2. Cut a hole as follows in the ceiling tile for the Category 5 cable:
  - a. Place the mounting template over the area where you plan to install the access point.
  - b. Use the box cutter or similar tool to cut along the line marking the opening for the port connectors.

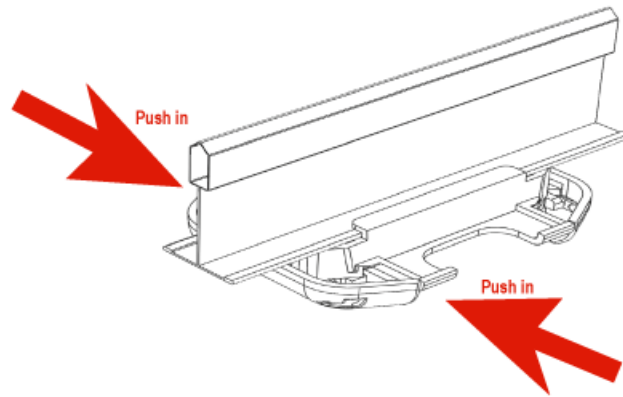
- c. Remove the mounting template and the material you cut from the ceiling tile.
3. Run the Category 5 cable from the ceiling through the hole in the ceiling tile.
4. Ensure the snaps on the top of the ceiling-mount bracket are open so that the clips can fully extend to fit around the ceiling rail. The bracket is shipped in an open position so that it is ready to be clipped over a ceiling rail.



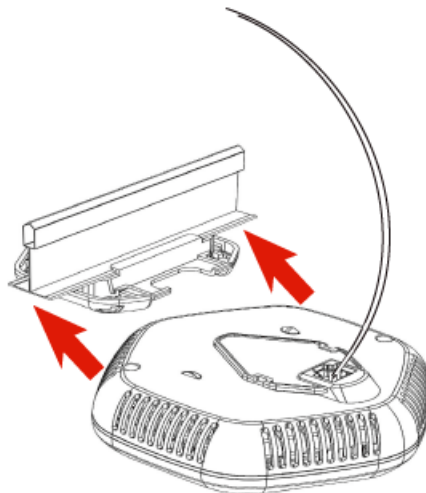
5. If the bracket is closed, open the snaps by pressing in and up with your thumbs on both sides of the snaps on the bottom of the bracket until it is fully open.



6. With the bracket clips fully extended, align the clips with the rail and hook the clips around the top sides of the rail. Push in on the sides of the bracket until the clips lock over the rail. Listen for a clicking sound that indicates that the clips have locked. Be sure the bracket has locked securely onto the rail by gently pulling down on the bracket before installing the wireless LAN access point (WLA).

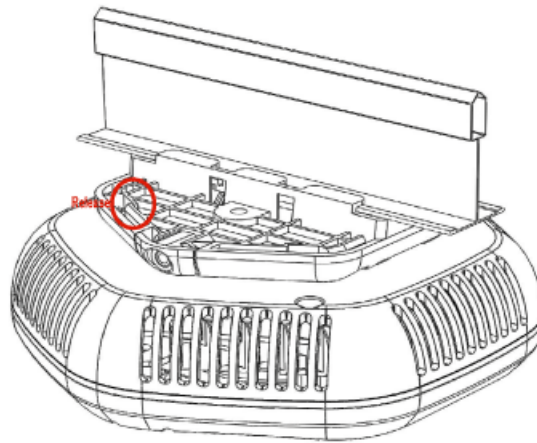


7. Plug in the Category 5 cable that extends from the ceiling into the WLA.
8. Align the WLA with the bracket and press forward until the WLA clicks into place. Be sure the WLA is seated correctly in the bracket by gently pulling down on the WLA.



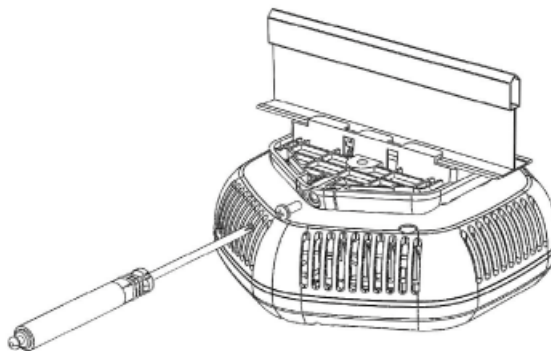
9. If the WLA is not properly secured, press in on the release button on the top of the bracket to unlock the WLA. Realign the access point, making sure the cable is still connected, and push in until the WLA clicks securely into place.





**NOTE:** We recommend that you use the optional security kit (separately orderable) to secure the access point. The kit includes a special tool and a security screw. Be sure that you retain the tool so that you can unlock and move the access point. Never use a power tool to insert or remove the security screw.

10. To lock the WLA into place, secure the security screw in through the release button by using the tool provided with the security kit (do not overtighten the screw).



**Related Documentation**

- [Installing the WLA532 Access Point on a Wall on page 36](#)

## Installing the WLA532 Access Point on a Wall

The WLA532 access point is an indoor, dual-band, dual-concurrent 3x3 IEEE 802.11n enterprise WLAN access point with three data streams. Mounting the device on the ceiling

is the primary installation method, however, you can also install the WLA532 access point on the wall using a specially ordered wall-mounting bracket. You can purchase a wall-mount kit at <http://www.juniper.net/techpubs/>.

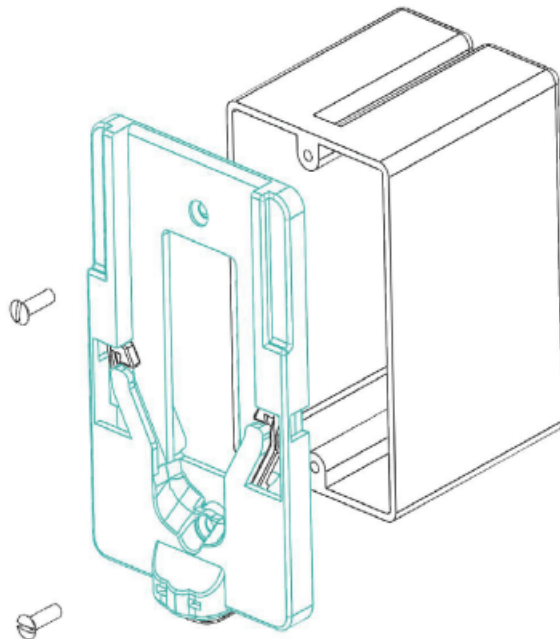
The WLA532 access point wall-mount package includes a bracket for mounting the access point to a wall socket.

Ensure that you have the following parts and tools available to install the access point:

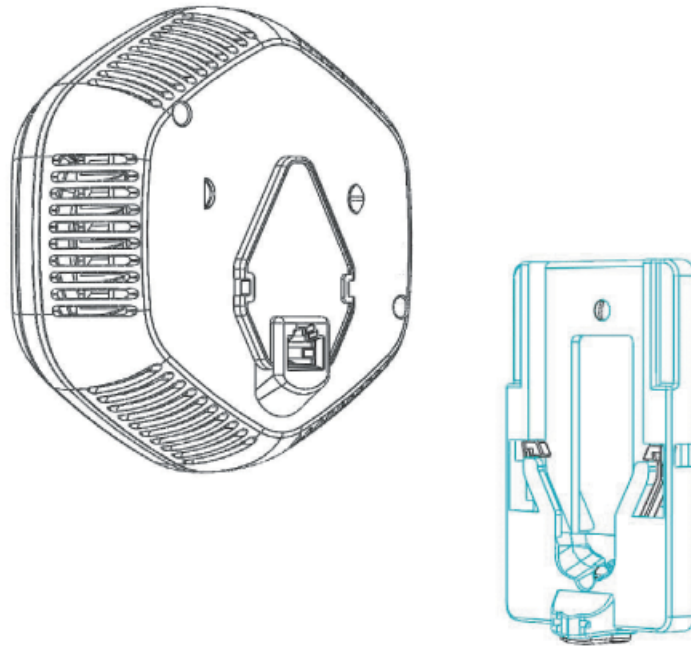
- Wall-mount bracket (provided)
- Category 5 cable, installed (not provided)
- two screws (provided)
- standard flat-head screwdriver (not provided)
- (Optional) Security kit (separately orderable), which includes a security tool and a security screw (not provided)

To install the access point on the wall socket:

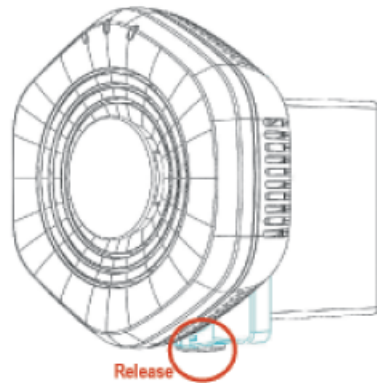
1. Hold the wall-mount centered over the wall socket and insert and secure the two screws through the bracket into the wall using a standard flat-head screwdriver.



2. Plug in the Category 5 cable from the wall socket to the access point.
3. Align the access point with the wall bracket and push down until you hear the access point click into place. Be sure the device is seated correctly in the wall bracket by gently pulling up then down on the access point.

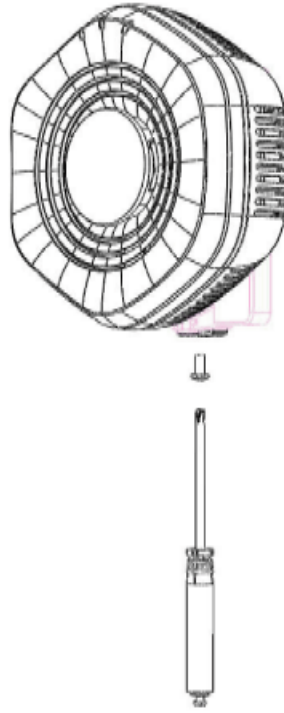


4. If the access point is not properly secured, press the release button on the bottom of the bracket to release the device. Realign the unit, making sure the cable is still connected and push down until the access point clicks securely into place.



**NOTE:** We recommend that you use the optional security kit (separately orderable) to secure the access point. The kit includes a special tool and a security screw. Be sure that you retain the tool so that you can unlock and move the access point. Never use a power tool to insert or remove the security screw.

5. To lock the WLA into place, secure the security screw in through the release button by using the tool provided with the security kit (do not overtighten the screw).



**Related Documentation**

- [Installing the WLA532 Access Point on a Suspended Ceiling Rail on page 33](#)

## Connecting the Access Point to Wireless LAN Controllers

You can connect a wireless LAN access point to a Wireless LAN controller (WLC) directly or indirectly through an intermediate layer 2 or layer 3 network.

To connect the access point directly to a WLC:

1. Insert one end of a Category 5 cable with a standard RJ-45 connector to the ethernet port of the access point and the other end to ethernet port of the controller. For connection to an access point, use a straight-through signaling cable.
2. Observe the access point LED for the port on the controller.

The link is activated if the LED is green and glowing steadily.

To configure the access point connection, use the RingMaster GUI or the Mobility System Software CLI.

If you are installing the access point in a Wireless LAN mesh or wireless bridge configuration, you must configure the access point connection before deploying the access point in the final location. For more information, see the Mobility System Software Configuration Guide or the Configuration Guide.

**Related Documentation**

- [Mobility System Software Configuration Guide at \[http://www.juniper.net/techpubs/en\\\_US/ieee-independent/wireless/information/products/pathway/pages/wireless/software-7.html\]\(http://www.juniper.net/techpubs/en\_US/ieee-independent/wireless/information/products/pathway/pages/wireless/software-7.html\)](http://www.juniper.net/techpubs/en_US/ieee-independent/wireless/information/products/pathway/pages/wireless/software-7.html)

- [WLA532 AccessPoint Hardware Overview on page 3](#)
- [Ethernet Connections for WLA532 Access Points on page 7](#)
- [Access Point LEDs in a WLA 532 on page 7](#)

## CHAPTER 9

# Verification Tasks

- [Verifying the Health of WLA Series Access Points Using LEDs on page 41](#)

### Verifying the Health of WLA Series Access Points Using LEDs

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After you install the WLA series access point and enable the PoE on the ethernet cable connected to the access point, you can verify the access point status by observing the health LED. The health or LINK LED indicates if the access point is operational or not.

- If the LED is green and glowing steadily, the access point has booted successfully by the wireless LAN controller and is operational.
- If the LED is not steadily glowing green, contact the system administrator for the WLC.

#### **Related Documentation**

- [Access Point LEDs in a WLA 532 on page 7](#)

## PART 5

# Troubleshooting

- [Customer Support on page 45](#)

# Customer Support

- [Contacting Juniper for Missing WLA532 Access Point Parts on page 45](#)

## Contacting Juniper for Missing WLA532 Access Point Parts

If you receive your WLA532 access point installation kit with any incorrect, missing, or damaged parts contact Juniper Networks at <http://www.juniper.net>. If possible, retain the carton, including the original packing materials. Use them again to repack the product if you need to return it. Refer to the following checklist to ensure you have received a complete installation kit.

The WLA532 access point installation kit includes:

- One WLA532 unit
- One ceiling-mount bracket
- Mounting template
- WLA532 Access Point Quick Start Guide



NOTE: A junction box wall-mount kit can be ordered separately.

**Related  
Documentation**

- [Installing the WLA532 Access Point on a Suspended Ceiling Rail on page 33](#)
- [Installing the WLA532 Access Point on a Wall on page 36](#)



PART 6

# Index

- [Index on page 49](#)

# Index

