

# Cisco WAP351 Wireless-N Dual Radio Access Point with 5-Port Switch

## Improved Coverage, Easy to Deploy, Secure Business-Class Wireless-N Connectivity

### Highlights

- Provides cost-effective 802.11n connectivity for 2.4-GHz and 5-GHz clients
- 5-Port Gigabit Ethernet Switch for connecting multiple devices with PD/PSE support
- PD port allows access point to be powered by backbone switch
- Captive portal enables highly secure guest access with customized roles and rights
- Single point setup requires no controller for easy, cost-effective deployment of multiple access points
- Works right out of the box with easy installation and simple web-based configuration and wizard

### Product Overview

As your employees become more mobile and collaborative, they need dependable, business-class access to network applications throughout the office. Extend secure, high-performance mobile networking to them and guests simply and cost-effectively with the Cisco® WAP351 Wireless-N Dual Radio Access Point. This flexible solution lets you connect dozens of employees, and can scale to accommodate additional users and changing business needs.

The Cisco WAP351 Wireless-N Dual Radio Access Point uses concurrent dual-band radios for improved coverage and user capacity. The 5-port Gigabit Ethernet switch allows more devices to be connected to the access point (AP) and allows the AP to be powered by the backbone switch, also helping reduce cabling and wiring costs. Intelligent quality-of-service (QoS) features let you prioritize bandwidth-sensitive traffic for voice-over-IP (VoIP) and video applications.

To provide secure guest access to visitors and other users, the Cisco WAP351 Wireless-N Dual Radio Access Point supports a captive portal with multiple authentication options and the ability to configure rights, roles, and bandwidth. A customized guest login page lets you present a welcome message and access details, and reinforces your brand with company logos.

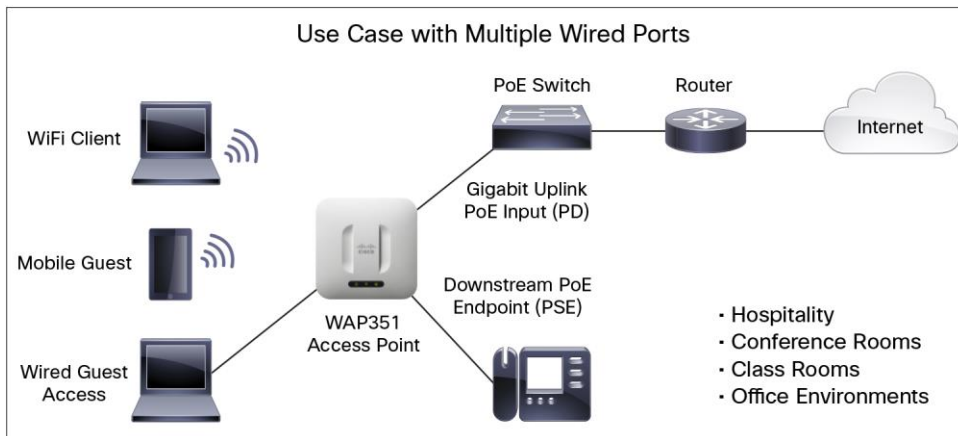
Cisco WAP351 Wireless-N Dual Radio Access Points are easy to set up and use, with intuitive wizard-based configuration to get you up and running in minutes. An attractive design with flexible mounting options enables the access points to smoothly blend into any small business environment.

To enhance reliability and safeguard sensitive business information, the Cisco WAP351 Wireless-N Dual Radio Access Point supports both Wi-Fi Protected Access (WPA) Personal and Enterprise, encoding all your wireless transmissions with powerful encryption. In addition, 802.1 X RADIUS authentications help keep unauthorized users out.

Designed to scale smoothly as your organization grows, the access points feature controllerless Single Point Setup that simplifies the deployment of multiple access points without additional hardware. With the Cisco WAP351 Wireless-N Dual Radio Access Point, you can extend business-class wireless networking to employees and guests anywhere in the office, with the flexibility to meet new business needs for years to come.

Figure 1 shows a typical Wireless Access Point configuration. Figures 2 and 3 show the front and back panels, respectively, of the access point.

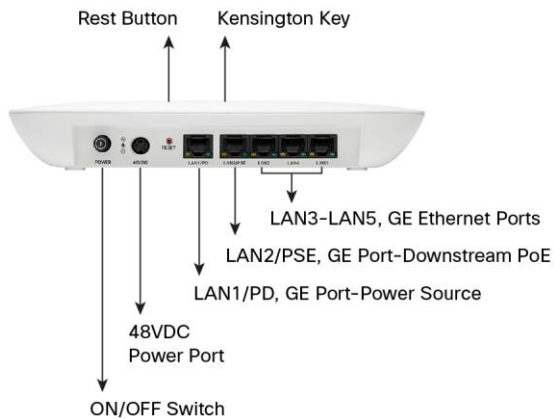
**Figure 1.** Typical Configuration



**Figure 2.** Front Panel of Cisco WAP351 Wireless-AC/N Dual Radio Access Point with 5-Port Switch



**Figure 3.** Back Panel of Cisco WAP351 Wireless-N Dual Radio Access Point with 5-Port Switch



## Features

- Concurrent dual-band radio supports up to 300 Mbps per radio to maximize capacity and coverage.
- Single Point Setup, a controllerless technology, simplifies the deployment and management of multiple access points - without requiring additional hardware.
- Robust security, including WPA2, 802.1X with RADIUS secure authentication, and rogue-access-point detection, helps protect sensitive business information.
- Captive portal enables highly secure, customized guest access with multiple rights and roles.
- Simple installation and intuitive web-based configuration and wizard enable fast, simple deployment and setup in minutes.
- 5- Port Gigabit Ethernet LAN Switch supports both PD and PSE, allowing IP devices and the AP to be powered by a backbone switch.
- Sleek design with multiple internal antennas and versatile mounting kit enables installation on a ceiling, wall, or desktop.
- Intelligent QoS prioritizes network traffic to help keep critical network applications running at top performance.
- Power-saving sleep mode and port control features help maximize energy efficiency.
- Workgroup Bridge mode lets you expand your network by wirelessly connecting to a second Ethernet network.
- Support for IPv6 lets you deploy future networking applications and operating systems without costly upgrades.
- Limited lifetime hardware warranty provides peace of mind.

## Specifications

Table 1 lists the specifications, package contents, and minimum requirements for the Cisco WAP351 Wireless Access Point, and Table 2 gives information about its RF performance.

**Table 1.** Specifications for Cisco WAP351 Wireless Access Point

Specifications	Description
<b>Standards</b>	IEEE 802.11n, 802.11g, 802.11b, 802.3af, 802.3u, 802.1X (security authentication), 802.1Q (VLAN), 802.1D (Spanning Tree), 802.11i (WPA2 security), 802.11e (wireless QoS), IPv4 (RFC 791), IPv6 (RFC 2460)
<b>Cabling type</b>	Category 5e or better
<b>Antennas</b>	Internal antennas optimized for installation on a wall or ceiling
<b>LED indicators</b>	Power, WLAN, LAN
<b>Operating system</b>	Linux
<b>Physical Interfaces</b>	
<b>Ports</b>	5 10/100/1000 Ethernet, with support for 802.3af /at PoE, Power Port for AC adapter (not included)
<b>Power Supply</b>	802.3af/at PoE and External 48V/1.25A DC power adapter (not included)
<b>Buttons</b>	Reset button, Power On/Off
<b>Lock slot</b>	Slot for Kensington lock
<b>Physical Specifications</b>	
<b>Physical dimensions (W x D x H)</b>	9.055 x 9.055 x 1.575 in. (230 x 230 x 40 mm)
<b>Weight</b>	1.34 lb or 0.607 kg
<b>Network Capabilities</b>	
<b>VLAN support</b>	Yes
<b>Number of VLANs</b>	1 management VLAN plus 16 VLANs for SSIDs
<b>802.1X supplicant</b>	Yes
<b>SSID-to-VLAN mapping</b>	Yes
<b>Auto channel selection</b>	Yes
<b>Spanning Tree</b>	Yes
<b>Load balancing</b>	Yes
<b>IPv6</b>	Yes <ul style="list-style-type: none"> <li>• IPv6 host support</li> <li>• IPv6 RADIUS, syslog, Network Time Protocol (NTP), etc.</li> </ul>
<b>Layer 2</b>	802.1Q-based VLANs, 16 active VLANs plus 1 management VLAN
<b>Security</b>	
<b>WPA/WPA2</b>	Yes, including Enterprise authentication
<b>Access control</b>	Yes, management access control list (ACL) plus MAC ACL
<b>Secure management</b>	HTTPS
<b>SSID broadcast</b>	Yes
<b>Rogue-access-point detection</b>	Yes
<b>Mounting and Physical Security</b>	
<b>Multiple mounting options</b>	Mounting bracket included for easy ceiling or wall mounting
<b>Physical security lock</b>	Kensington lock slot
<b>Quality of Service</b>	
<b>Quality of service (QoS)</b>	Wi-Fi Multimedia and Traffic Specification (WMM TSPEC), Client QoS
<b>Performance</b>	
<b>Wireless throughput</b>	Up to 300-Mbps data rate (real-world throughput will vary)

Specifications	Description				
<b>Recommended user support</b>	32 active clients/users per radio				
<b>Multiple-Access Point Management</b>					
<b>Single Point Setup</b>	Yes				
<b>Number of access points per cluster</b>	8				
<b>Active clients per cluster</b>	240				
<b>Configuration</b>					
<b>Web user interface</b>	Built-in web user interface for easy browser-based configuration (HTTP/HTTPS)				
<b>Management</b>					
<b>Management protocols</b>	Web browser, Simple Network Management Protocol (SNMP) v3, Bonjour				
<b>Remote management</b>	Yes				
<b>Event logging</b>	Local, remote syslog, email alerts				
<b>Network diagnostics</b>	Logging and packet capture				
<b>Web firmware upgrade</b>	Firmware upgradable through web browser, imported/exported configuration file				
<b>Dynamic Host Configuration Protocol (DHCP)</b>	DHCP client				
<b>IPv6 host</b>	Yes				
<b>HTTP redirect</b>	Yes				
<b>Wireless</b>					
<b>Frequency</b>	Dual concurrent radios (2.4 and 5 GHz)				
<b>Radio and modulation type</b>	Dual radio, orthogonal frequency division multiplexing (OFDM)				
<b>WLAN</b>	802.11n 2x3 multiple-input multiple-output (MIMO) with 2 spatial streams on 2.4 GHz 2x2 multiple-input multiple-output (MIMO) with 2 spatial streams on 5 GHz 20, and 40 MHz for 802.11n PHY data rate up to 600 Mbps				
<b>Data rates supported</b>	802.11a/b/g: <ul style="list-style-type: none"> <li>• 54, 48, 36, 24, 18, 12, 9, 6, 11, 5.5, 2, and 1 Mbps</li> <li>• 802.11n: 6.5 to 300 Mbps <ul style="list-style-type: none"> <li>◦ 20-MHz bandwidth: MCS 0-15 for supported data rates</li> <li>◦ 40-MHz bandwidth: MCS 0-15 for supported data rates</li> </ul> </li> </ul>				
<b>Frequency band and 20-MHz operating channels</b>	<table border="0"> <tr> <td style="vertical-align: top;"> <b>A Regulatory Domain:</b> <ul style="list-style-type: none"> <li>• 2.412 to 2.462 GHz; 11 channels</li> <li>• 5.180 to 5.240 GHz; 4 channels</li> <li>• 5.745 to 5.825 GHz; 5 channels</li> </ul> </td> <td style="vertical-align: top;"> <b>E Regulatory Domain:</b> <ul style="list-style-type: none"> <li>• 2.412 to 2.472 GHz; 13 channels</li> <li>• 5.180 to 5.240 GHz; 4 channels</li> </ul> </td> </tr> <tr> <td colspan="2" style="vertical-align: top;"> <b>C Regulatory Domain:</b> <ul style="list-style-type: none"> <li>• 2.412 to 2.462 GHz; 11 channels</li> <li>• 5.745 to 5.805 GHz; 4 channels</li> </ul> </td> </tr> </table>	<b>A Regulatory Domain:</b> <ul style="list-style-type: none"> <li>• 2.412 to 2.462 GHz; 11 channels</li> <li>• 5.180 to 5.240 GHz; 4 channels</li> <li>• 5.745 to 5.825 GHz; 5 channels</li> </ul>	<b>E Regulatory Domain:</b> <ul style="list-style-type: none"> <li>• 2.412 to 2.472 GHz; 13 channels</li> <li>• 5.180 to 5.240 GHz; 4 channels</li> </ul>	<b>C Regulatory Domain:</b> <ul style="list-style-type: none"> <li>• 2.412 to 2.462 GHz; 11 channels</li> <li>• 5.745 to 5.805 GHz; 4 channels</li> </ul>	
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<b>Nonoverlapping channels</b>	<b>2.4 GHz</b> <ul style="list-style-type: none"> <li>• 802.11b/g <ul style="list-style-type: none"> <li>◦ 20 MHz: 3</li> </ul> </li> <li>• 802.11n <ul style="list-style-type: none"> <li>◦ 20 MHz: 3</li> </ul> </li> </ul> <b>5 GHz</b> <ul style="list-style-type: none"> <li>• 802.11a <ul style="list-style-type: none"> <li>◦ 20 MHz: 9</li> </ul> </li> <li>• 802.11n <ul style="list-style-type: none"> <li>◦ 20 MHz: 9</li> <li>◦ 40 MHz: 4</li> </ul> </li> </ul>				
<b>Wireless isolation</b>	Wireless isolation between clients				

Specifications	Description
<b>External antennas</b>	None
<b>Internal antennas</b>	Internal Fixed PiFA Antenna
<b>Antenna gain in dBi</b>	Maximum antenna gain of 5.3 dBi on 2.4 GHz Maximum antenna gain of 5.1 dBi on 5 GHz
<b>Wireless distribution system (WDS)</b>	Yes
<b>Roaming</b>	802.11i only
<b>Multiple SSIDs</b>	16
<b>Wireless VLAN map</b>	Yes
<b>WLAN security</b>	Yes
<b>Wi-Fi Multimedia (WMM)</b>	Yes, with unscheduled automatic power save
<b>Operating Modes</b>	
<b>Access point</b>	Access Point mode, WDS Bridging, Workgroup Bridge mode
<b>Environmental</b>	
<b>Power options</b>	IEEE 802.3af/af Ethernet switch Cisco Power Injector - SB-PWR-INJ2-xx AC Adapter - SB-PWR-48V-xx (not included) PoE power: Peak PoE power: 18W
<b>Compliance</b>	Safety: <ul style="list-style-type: none"> <li>• UL 60950-1</li> <li>• CAN/CSA-C22.2 No. 60950-1</li> <li>• IEC 60950-1</li> <li>• EN 60950-1</li> </ul> Radio approvals: <ul style="list-style-type: none"> <li>• FCC Part 15.247, 15.407</li> <li>• RSS-210 (Canada)</li> <li>• EN 300.328, EN 301.893 (Europe)</li> <li>• AS/NZS 4268.2003 (Australia and New Zealand)</li> </ul> EMI and susceptibility (Class B): <ul style="list-style-type: none"> <li>• FCC Part 15.107 and 15.109</li> <li>• ICES-003 (Canada)</li> <li>• EN 301.489-1 and -17 (Europe)</li> </ul>
<b>Operating temperature</b>	0° to 40°C (32° to 104°F)
<b>Storage temperature</b>	-20° to 70°C (-4° to 158°F)
<b>Operating humidity</b>	10% to 85% noncondensing
<b>Storage humidity</b>	5% to 90% noncondensing
<b>System memory</b>	128-MB RAM 128-MB Flash
<b>Package Contents</b>	
<ul style="list-style-type: none"> <li>• Cisco WAP351 Wireless-N Dual Radio Access Point</li> <li>• Ceiling-/wall-mounting kit</li> <li>• User guide on CD-ROM</li> <li>• Quick-start guide</li> <li>• Ethernet network cable</li> </ul>	
<b>Minimum Requirements</b>	
<ul style="list-style-type: none"> <li>• Switch or router with PoE support, PoE injector, or AC Power Adapter</li> <li>• Web-based configuration: Java-enabled web browser</li> </ul>	
<b>Warranty</b>	

Specifications	Description
Access point	Limited lifetime

**Table 2.** Cisco WAP351 Wireless-N Access Point RF Performance Table

	Maximum Transmit Power (dBm) Per Chain	Receiver Sensitivity (dBm) Per Chain
<b>2.4 GHz – 802.11b</b>		
1 Mbps	17.0 +/- 1.5	-91.0
11 Mbps	17.0 +/- 1.5	-89.0
<b>2.4 GHz – 802.11g</b>		
6 Mbps	17.0 +/- 1.5	-93.0
54 Mbps	15.0 +/- 1.5	-75.0
<b>2.4 GHz – 802.11n HT20</b>		
MCS0/8	17.0 +/- 1.5	-90.0
MCS7/15	14.0 +/- 1.5	-72.0
<b>2.4 GHz – 802.11n HT40</b>		
MCS0/8	15.0 +/- 1.5	-88.0
MCS7/15	13.0 +/- 1.5	-69.0
<b>5 GHz – 802.11a</b>		
6 Mbps	17.0 +/- 1.5	-91.0
54 Mbps	13.0 +/- 1.5	-73.0
<b>5 GHz – 802.11n HT20</b>		
MCS0/8	16.0 +/- 1.5	-89.0
MCS7/15	12.0 +/- 1.5	-71.0
<b>5 GHz – 802.11n HT40</b>		
MCS0/8	14.0 +/- 1.5	-86.0
MCS7/15	11.0 +/- 1.5	-67.0

**Note:** This table shows the maximum capability of the hardware. The transmit power may be reduced to comply with local regulatory requirements.

## Ordering Information

Table 3 gives ordering information for the Cisco WAP351 Wireless-N Dual Radio Access Point with 5-Port Switch.

**Table 3.** Ordering Table

Part Number	Description
<b>WAP351</b>	Cisco WAP351 Wireless-N Dual Radio Access Point with 5 Ports Switch
<b>WAP351-A-K9</b>	Cisco WAP351 Wireless-N Dual Radio Access Point with 5 Ports Switch (U.S., Canada, Mexico, Australia/New Zealand)
<b>WAP351-C-K9</b>	Cisco WAP351 Wireless-N Dual Radio Access Point with 5 Ports Switch (China)
<b>WAP351-E-K9</b>	Cisco WAP351 Wireless-N Dual Radio Access Point with 5 Ports Switch (ETSI)
<b>SB-PWR-48V-xx</b>	Cisco 48V Power Adapter
<b>SB-PWR-INJ2-xx</b>	Cisco Gigabit Power over Ethernet Injector-30W

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## Cisco Limited Lifetime Warranty for Cisco Small Business Products

This Cisco Small Business product comes with a limited lifetime hardware warranty. Product warranty terms and other information applicable to Cisco products are available at <http://www.cisco.com/go/warranty>.

### Services for Small Business

Reduce downtime with fast, expert technical support and flexible hardware coverage. Cisco Services improve network availability and help you get the most value from your Cisco products. Service plans for your Cisco Small Business products provide more support than a product warranty. A warranty protects you against product defects, and a majority of support calls are unrelated to faulty materials or manufacturing. Most callers ask about product features, technical issues, or how to expand their network.

Cisco offers an unlimited number of calls and no restrictions on call duration, so you can get the help you need, and the most from your Cisco product.

For more information on Cisco Services, see <http://www.cisco.com/go/sbs>.

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For more information on Cisco products and solutions, visit <http://www.cisco.com/smallbusiness> or <http://www.cisco.com/go/wap300>.



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