Cisco Aironet 1130AG Series IEEE 802.11A/B/G Access Point

Low-profile enterprise-class access point with integrated antennas for easy deployment in offices and similar RF environments.

Product Overview

Cisco® Aironet® 1130AG Series IEEE 802.11a/b/g access points provide high-capacity, high-security, enterprise-class features in an unobtrusive, office-class design, delivering WLAN access with the lowest total cost of ownership. With high-performing dual IEEE 802.11a and 802.11g radios, the Cisco Aironet 1130AG Series provides a combined capacity of up to 108 Mbps to meet the needs of growing WLANs. Hardware-assisted Advanced Encryption Standard (AES) or temporal key integrity protocol (TKIP) encryption provides uncompromised support for interoperable IEEE 802.11i, Wi-Fi Protected Access 2 (WPA2) or WPA security. The Cisco Aironet 1130AG Series uses radio and network management features for simplified deployment, along with built-in omnidirectional antennas that provide robust and predictable WLAN coverage for offices and similar RF environments. The competitively priced Cisco Aironet 1130AG Series is ready to install and easy to manage, reducing the cost of deployment and ongoing maintenance.

The Cisco Aironet 1130AG Series is available in two versions: unified or autonomous. Unified access points operate with the Lightweight Access Point Protocol (LWAPP) and work in conjunction with Cisco wireless LAN controllers and the Cisco Wireless Control System (WCS). When configured with LWAPP, the Cisco Aironet 1130AG Series can automatically detect the best-available Cisco wireless LAN controller and download appropriate policies and configuration information with no manual intervention. Autonomous access points are based on Cisco IOS® Software and may optionally operate with the CiscoWorks Wireless LAN Solution Engine (WLSE). Autonomous access points, along with the CiscoWorks WLSE, deliver a core set of features and may be field-upgraded to take advantage of the full benefits of the Cisco Unified Wireless Network as requirements evolve.

The Cisco Aironet 1130AG Series delivers optimal value for offices and similar environments. Built-in antennas provide omnidirectional coverage specifically designed for today's open workspaces. A multipurpose mounting bracket easily secures Cisco Aironet 1130AG Series access points to ceilings and walls. With an unobtrusive design, Cisco Aironet 1130AG Series access points are aesthetically pleasing and blend into their environments. For

maximum concealment, the access point may be placed above ceilings or suspended ceilings. The UL 2043 rating of the Cisco Aironet 1130AG Series allows the access point to be placed above ceilings in plenum areas regulated by municipal fire codes. Offered at a competitive price, and optimized for easy installation and operation, the Cisco Aironet 1130AG Series helps organizations attain a lower total cost of ownership.

Applications

In offices and similarly open environments, Cisco Aironet 1130AG Series access points may be installed on the ceiling to provide users with continuous coverage as they roam throughout a facility. In school buildings and similar facilities, the access points may be installed on the ceiling of each room and hallway to provide users with full coverage and high network availability. In areas where a ceiling installation may not be practical such as retail hotspots or similar small facilities, the access points can be mounted simply and securely on walls for complete coverage with minimal installation cost.

Award-Winning Security

The Cisco Aironet 1130AG Series has achieved National Institute of Standards and Technology (NIST) FIPS 140-2 level 2 validation and is in process for Information Assurance validation under the National Information Assurance Partnership (NIAP) Common Criteria program. The Cisco Aironet 1130AG Series supports 802.11i, Wi-Fi Protected Access (WPA), WPA2, and numerous Extensible Authentication Protocol (EAP) types. WPA and WPA2 are the Wi-Fi Alliance certifications for interoperable, standards-based WLAN security. These certifications support IEEE 802.1X for user-based authentication, Temporal Key Integrity Protocol (TKIP) for WPA encryption, and Advanced Encryption Standard (AES) for WPA2 encryption. These certifications help to ensure interoperability between Wi-Fi-certified WLAN devices from different manufacturers.

The Cisco Aironet 1130AG Series hardware-accelerated AES encryption supports enterprise-class, government-grade secure encryption over the WLAN without compromising performance. IEEE 802.1X authentication helps to ensure that only authorized users are allowed on the network. Backward compatibility and support for WPA client devices running TKIP, the RC4 encryption algorithm, is also supported by the Cisco Aironet 1130AG Series.

Cisco Aironet 1130AG Series Access Points operating with LWAPP support Cisco Unified Intrusion Detection System/Intrusion Prevention System (IDS/IPS), a software feature that is part of the Cisco Self-Defending Network and is the industry's first integrated wired and wireless security solution. Cisco Unified IDS/IPS takes a comprehensive approach to security—at the wireless edge, wired edge, WAN edge, and through the data center. When an associated client sends malicious traffic through the Cisco Unified Wireless Network, a Cisco wired IDS device detects the attack and sends shun requests to Cisco wireless LAN controllers, which will then disassociate the client device.

Autonomous or unified Cisco Aironet 1130AG Series Access Points support management frame protection for the authentication of 802.11 management frames by the wireless network infrastructure. This allows the network to detect spoofed frames from access points or malicious users impersonating infrastructure access points. If an access point detects a malicious attack, an incident will be generated by the access point and reports will be gathered on the Cisco wireless LAN controller, Cisco WCS, or CiscoWorks WLSE.

Features and Benefits

Table 1 lists features and benefits of Cisco Aironet 1130AG Series access points.

Table 1. Features and Benefits of Cisco Aironet 1130AG Series Access Points

Feature	Benefit
Dual 802.11a and 802.11g Radios	• Provides up to 108 Mbps of capacity in a single device for industry-leading capacity and backward compatibility with legacy 802.11b clients.

Feature	Benefit
Supports 15 Nonoverlapping Channels	• Lower potential interference with neighboring access points simplifies deployment • Fewer transmission errors deliver greater throughput
Industry-Leading Radio Design	• Provides robust signals to long distances • Mitigates the effects of multipath signal propagation for more consistent coverage
Variable Transmit Power Settings	• Allows access point coverage to be tuned for differing requirements • Low—dBm setting supports closer spacing of access points in high-density deployments
Integrated Antennas	• Complete system is deployable out of the box without external antennas • Specifically designed to provide omnidirectional coverage for offices and similar radio frequency environments
Hardware-Assisted AES Encryption	• Provides high security without performance degradation
Cisco Unified IDS/IPS	• This integrated software feature is part of the Cisco Self-Defending Network and is the industry's first integrated wired and wireless security solution. When a trusted client acts maliciously, the wired IDS detects the attack and sends shun requests to Cisco WLAN controllers, which will then disassociate the client device.
Management Frame Protection	• This feature provides for the authentication of 802.11 management frames by the wireless network infrastructure. This allows the network to detect spoofed frames from access points or malicious users impersonating infrastructure access points. If an access point detects a malicious attack, an incident will be generated by the access points and reports will be gathered on the Cisco wireless LAN controller, Cisco WCS, or CiscoWorks WLSE.
IEEE 802.11i-Compliant; WPA2-Certified and WPA-Certified	• Helps to ensure interoperable security with wireless LAN client devices from other manufacturers
Low-Profile Design	• Unobtrusive design blends in to environment • "Quiet" LED does not draw attention to it when operating normally and no action is required
Multipurpose and Lockable Mounting Bracket	• Installs easily to walls, ceilings, and suspended ceiling railways • Accommodates standard padlock to prevent theft
Inline Power Support (IEEE 802.3af and Cisco Inline Power)	• Provides an interoperable alternative to AC power • Simplifies deployment by allowing power to be supplied over the Ethernet cable • Compatible with 802.3af-compliant power sources
Cisco Green Bulk Packaging	To reduce product packaging and preserve the environment, the Cisco Aironet 1130 Series may be ordered in a bulk package that includes 10 access points and 10 mounting kits.

Summary/Conclusion

The Cisco Aironet 1130AG Series provides the ideal enterprise access point for offices and similar environments. With two high-performance radios, these access points provide simultaneous support for the 802.11a and 802.11g standards, offering 108 Mbps of capacity for your growing WLAN. Incorporating AES encryption in hardware, the Cisco Aironet 1130AG Series complies with the 802.11i security standard and is WPA2-certified, helping to assure that your network employs the strongest security available while maintaining interoperability with products from other manufacturers. Additional design features, including diversity antennas with omnidirectional coverage and an unobtrusive form factor, along with an attractive price, provide low total cost of ownership.

For office environments, the Cisco Aironet 1130AG Series is a cost-compelling solution for a high-capacity, high-security, enterprise-class WLAN.

Product Specifications

Table 2 lists the product specifications for Cisco Aironet 1130AG access points.

Table 2. Product Specifications for Cisco Aironet 1130AG Access Points

Item	Specification
Part Number for Individual Access Points	• AIR-AP1131AG-x-K9 (Cisco IOS Software) • AIR-LAP1131AG-x-K9 (Cisco Unified Wireless Network Software) **Note**: The Cisco Aironet 1130AG Series may be ordered with Cisco IOS Software to operate as an autonomous AP with Cisco Unified Wireless Network Software using LWAPP. When the 1130AG is operating as a lightweight AP a WLAN controller is required. • Regulatory Domains: (x = Regulatory Domain) • A = FCC • C = China • E = ETSI • I = Israel • J = TELEC (Japan) • K = Korea • N = North America (Excluding FCC) • P = Japan2 • S = Singapore • T = Taiwan Customers are responsible for verifying approval for use in their individual countries. To verify approval and to identify the regulatory domain that corresponds to a particular country please visit: http://www.cisco.com/go/aironet/compliance Not all regulatory domains have been approved. As they are approved, the part numbers will be available on the Global Price List.
Part Number for Cisco Green Bulk Packaging	• AIR-AP1131-x-K9-10 (Cisco IOS Software) • AIR-LAP1131-xK9-10 (Cisco Unified Wireless Network Software) **Note**: The Cisco Aironet 1130AG Series may be ordered with Cisco IOS Software to operate as an autonomous AP with Cisco Unified Wireless Network Software using LWAPP. When the 1130AG is operating as a lightweight AP a WLAN controller is required. • Regulatory Domains: (x = Regulatory Domain) • A = FCC • E = ETSI • Customers are responsible for verifying approval for use in their individual countries. To verify approval and to identify the regulatory domain that corresponds to a particular country please visit: http://www.cisco.com/go/aironet/compliance
Software	• Cisco IOS Software Release 12.3(8)JA or later (autonomous). • Cisco IOS Software Release 12.3(11)JX or later (Lightweight Mode). • Cisco Unified Wireless Network Software Release 4.0 or later.
Data Rates Supported	• 802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps • 802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps
Network Standard	IEEE 802.11a, 802.11b, and 802.11g
Uplink	Autosensing 802.3 10/100BASE-T Ethernet
Frequency Band and Operating Channels	**Americas (FCC)** • 2.412 to 2.462 GHz; 11 channels • 5.15 to 5.35, 5.725 to 5.825 GHz; 12 channels **China** • 2.412 to 2.472 GHz; 13 channels • 5.725 to 5.825 GHz; 4 channels **ETSI** • 2.412 to 2.472 GHz; 13 channels • 5.15 to 5.725 GHz; 19 channels **Israel** • 2.432 to 2.472 GHz; 9 channels • 5.15 to 5.35 GHz, 8 channels **Japan (TELEC)** • 2.412 to 2.472 GHz; 13 channels Orthogonal Frequency Division Multiplexing (OFDM) • 2.412 to 2.484 GHz; 14 channels Complementary Code Keying (CCK) • 5.15 to 5.25 GHz; 4 channels **Japan–P (TELEC 2 (Japan2) Cnfg)** • 2.412 to 2.472 GHz; 13 channels Orthogonal Frequency Division Multiplexing (OFDM) • 2.412 to 2.484 GHz; 14 channels Complementary Code Keying (CCK)

<table>
<tr><th>Item</th><th>Specification</th></tr>
<tr><td></td><td>
• 5.15 to 5.35 GHz, 8 channels
Japan-Q
• 2.412 to 2.472 GHz; 13 channels Orthogonal Frequency Division Multiplexing (OFDM)
• 2.412 to 2.484 GHz; 14 channels Complementary Code Keying (CCK)
• 5.15 to 5.35 GHz, 8 channels
• 5.470 to 5.725 GHz, 11 channels
Korea
• 2.412 to 2.472 GHz; 13 channels
• 5.15 to 5.35, 5.46 to 5.72, 5.725 to 5.825, 19 channels
North America
• 2.412 to 2.462 GHz; 11 channels
• 5.15 to 5.35, 5.725 to 5.825 GHz; 12 channels
Singapore
• 2.412 to 2.472 GHz, 13 channels
• 5.15 to 5.35 GHz, 8 channels and 5.725 to 5.825 GHz, 12 channels
Taiwan
• 2.412 to 2.462 GHz, 11 channels
• 5.25-5.35 GHz, 5.725 to 5.825, 7 channels
</td></tr>
<tr><td>Nonoverlapping Channels</td><td>802.11a: Up to 19</td><td>802.11b/g: 3</td></tr>
<tr><td>Receive Sensitivity (Typical)</td><td>802.11a:
6 Mbps: -87 dBm
9 Mbps: -86 dBm
12 Mbps: -85 dBm
18 Mbps: -84 dBm
24 Mbps: -80 dBm
36 Mbps: -78 dBm
48 Mbps: -73 dBm
54 Mbps: -71 dBm</td><td>802.11g:
1 Mbps: -93 dBm
2 Mbps: -91 dBm
5.5 Mbps: -88 dBm
6 Mbps: -86 dBm
9 Mbps: -85 dBm
11 Mbps: -85 dBm
12 Mbps: -84 dBm
18 Mbps: -83 dBm
24 Mbps: -79 dBm
36 Mbps: -77 dBm
48 Mbps: -72 dBm
54 Mbps: -70 dBm</td></tr>
<tr><td>Available Transmit Power Settings (Maximum Power Setting Will Vary by Channel and According to Individual Country Regulations)</td><td>802.11a:
OFDM:
17 dBm (50 mW)
15 dBm (30 mW)
14 dBm (25 mW)
11 dBm (12 mW)
8 dBm (6 mW)
5 dBm (3 mW)
2 mW (2 dBm)
-1 dBm (1 mW)</td><td>802.11b:
CCK:
20 dBm (100 mW)
17 dBm (50 mW)
14 dBm (25 mW)
11 dBm (12 mW)
8 dBm (6 mW)
5 dBm (3 mW)
2 dBm (2 mW)
-1 dBm (1 mW)</td><td>802.11g:
OFDM:
17 dBm (50 mW)
14 dBm (25 mW)
11 dBm (12 mW)
8 dBm (6 mW)
5 dBm (3 mW)
2 dBm (2 mW)
-1 dBm (1 mW)</td></tr>
<tr><td>Range</td><td colspan="2">Indoor (Distance Across Open Office Environment):</td><td colspan="2">Outdoor:</td></tr>
<tr><td></td><td>802.11a:
80 ft (24 m) @ 54 Mbps
150 ft (45 m) @ 48 Mbps
200 ft (60 m) @ 36 Mbps
225 ft (69 m) @ 24 Mbps
250 ft (76 m) @ 18 Mbps
275 ft (84 m) @ 12 Mbps
300 ft (91 m) @ 9 Mbps
325 ft (100 m) @</td><td>802.11g:
100 ft (30 m) @ 54 Mbps
175 ft (53 m) @ 48 Mbps
250 ft (76 m) @ 36 Mbps
275 ft (84 m) @ 24 Mbps
325 ft (100 m) @ 18 Mbps
350 ft (107 m) @ 12 Mbps
360 ft (110 m) @ 11 Mbps
375 ft (114 m) @</td><td>802.11a:
100 ft (30 m) @ 54 Mbps
300 ft (91 m) @ 48 Mbps
425 ft (130 m) @ 36 Mbps
500 ft (152 m) @ 24 Mbps
550 ft (168 m) @ 18 Mbps
600 ft (183 m) @ 12 Mbps
625 ft (190 m) @ 9 Mbps
650 ft (198 m) @</td><td>802.11g:
120 ft (37 m) @ 54 Mbps
350 ft (107 m) @ 48 Mbps
550 ft (168 m) @ 36 Mbps
650 ft (198 m) @ 24 Mbps
750 ft (229 m) @ 18 Mbps
800 ft (244 m) @ 12 Mbps
820 ft (250 m) @ 11 Mbps
875 ft (267 m) @ 9 Mbps
900 ft (274 m) @ 6 Mbps
910 ft (277 m) @ 5.5 Mbps
940 ft (287 m) @ 2 Mbps
950 ft (290 m) @ 1 Mbps</td></tr>
</table>

Item	Specification			
	6 Mbps	9 Mbps 400 ft (122 m) @ 6 Mbps 420 ft (128 m) @ 5.5 Mbps 440 ft (134 m) @ 2 Mbps 450 ft (137 m) @ 1 Mbps	6 Mbps	
	Ranges and actual throughput vary based upon numerous environmental factors so individual performance may differ.			
Compliance	**Standards** Safety • UL 60950-1 • CAN/CSA-C22.2 No. 60950-1 • UL 2043 • IEC 60950-1 • EN 60950-1 • NIST FIPS 140-2 level 2 validation Radio Approvals • FCC Part 15.247, 15.407 • RSS-210 (Canada) • EN 300.328, EN 301.893 (Europe) • ARIB-STD 33 (Japan) • ARIB-STD 66 (Japan) • ARIB-STD T71 (Japan) • AS/NZS 4268.2003 (Australia and New Zealand) EMI and Susceptibility (Class B) • FCC Part 15.107 and 15.109 • ICES-003 (Canada) • VCCI (Japan) • EN 301.489-1 and -17 (Europe) Security • 802.11i, WPA2, WPA • 802.1X • AES, TKIP • FIPS 140-2 Pre-Validation List • Common Criteria (when running Cisco IOS software) Other • IEEE 802.11g and IEEE 802.11a • FCC Bulletin OET-65C • RSS-102			
Antennas	• 2.4 GHz ◦ Gain 3.0 dBi ◦ Horizontal Beamwidth 360° • 5 GHz ◦ Gain 4.5 dBi ◦ Horizontal Beamwidth 360°			
Security	**Authentication** Security Standards • WPA • WPA2 (802.11i) • Cisco TKIP • Cisco message integrity check (MIC) • IEEE 802.11 WEP keys of 40 bits and 128 bits **802.1X EAP types:** • EAP-Flexible Authentication via Secure Tunneling (EAP-FAST) • Protected EAP-Generic Token Card (PEAP-GTC) • PEAP-Microsoft Challenge Authentication Protocol Version 2 (PEAP-MSCHAP) • EAP-Transport Layer Security (EAP-TLS)			

Item	Specification
	• EAP-Tunneled TLS (EAP-TTLS) • EAP-Subscriber Identity Module (EAP-SIM) • Cisco LEAP **Encryption** • AES-CCMP encryption (WPA2) • TKIP (WPA) • Cisco TKIP • WPA TKIP • IEEE 802.11 WEP keys of 40 bits and 128 bits
Status LEDs	**External:** • Status LED indicates operating state, association status, error/warning condition, boot sequence, and maintenance status **Internal:** • Ethernet LED indicates activity over the Ethernet, status • Radio LED indicates activity over the radios, status
Dimensions (H x W x D)	7.5 in. x 7.5 in. x 1.3 in. (19.1 x 19.1 x 3.3 cm)
Weight	1.5 lb (0.67 kg)
Environmental	**Operating** • Altitude: 0 to 2500m • 32 to 104℉ (0 to 40℃) • 10 to 90% humidity (noncondensing) **Non Operating** • -40 to 158F (-40 to 70C) • Up to 95% humidity (noncondensing)
System Memory	• 32 MB RAM • 16 MB FLASH
Input Power Requirements	• 100-240 VAC; 50-60Hz (power supply) • 36-57 VDC (device)
Power Draw	12.2W maximum
Warranty	One year
Wi-Fi Certification	

System Requirements

Table 3 lists the system requirements for Cisco Aironet 1130AG access points.

Table 3. System Requirements for Cisco Aironet 1130AG Access Points

Access Utilizing	Description
Browser	Using the Web browser management GUI, requires a computer running Internet Explorer Version 6.0 or newer, or Netscape Navigator Version 7.0 or newer.
Power over Ethernet (PoE)	Power sourcing equipment (PSE) compliant with Cisco Inline Power or IEEE 802.3af, and providing at least 12.2W at 48 VDC.

Service and Support

Cisco Systems® offers a wide range of services programs to accelerate customer success. These innovative services programs are delivered through a unique combination of people, processes, tools, and partners, resulting in high levels of customer satisfaction. Cisco services help you protect your network investment, optimize network operations, and prepare your network for new applications to extend network intelligence and the power of your business. For more information about Cisco services, visit Cisco Technical Support Services or Cisco Advanced Services.

For More Information

For more information about the Cisco Aironet 1130AG Series, visit http://www.cisco.com/go/wireless or contact your local account representative.

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