Cisco Aironet 1240AG Series 802.11A/B/G Access Point

Cisco® Aironet® 1240AG Series Access Points deliver the versatility, high capacity, security, and enterprise-class features demanded by WLAN customers. These IEEE 802.11a/b/g access points are designed specifically for challenging RF environments such as factories, warehouses, and large retail establishments that require the antenna versatility associated with connectorized antennas, a rugged metal enclosure, and a broad operating temperature range. The Cisco Aironet 1240AG Series provides local as well as inline power, including support for IEEE 802.3af Power over Ethernet (PoE).

The Cisco Aironet 1240AG Series is a component of the Cisco Unified Wireless Network, a comprehensive solution that delivers an integrated, end-to-end wired and wireless network. Using the radio and network management features of the Cisco Unified Wireless Network for simplified deployment, the Cisco Aironet 1240AG Series extends the security, scalability, reliability, ease of deployment, and manageability available in wired networks to the wireless LAN.

The Cisco Aironet 1240AG 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 1240AG 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.

Award-Winning Security

The Cisco Aironet 1240AG Series has achieved National Institute of Standards and Technology (NIST) FIPS 140-2 level 2 validation and is in process for Common Criteria validation under the National Information Assurance Partnership (NIAP) program.

The Cisco Aironet 1240AG 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 1240AG 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 1240AG Series.

Cisco Aironet 1240AG 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 1240AG 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.

Applications

Designed for rugged environments and installations that require antenna versatility, the Cisco Aironet 1240AG Series features antenna connectors for extended range or coverage versatility and more flexible installation options. Manufacturing applications, for example, can place WLANs in hazardous locations and remotely place antennas in the hazardous locations while securing the Cisco Aironet 1240AG Series Access Points. The access point without wired connection will use the 5-GHz radio to wirelessly connect to the other access point for backhaul to the network.

The metal housing and industrial-grade components of the Cisco Aironet 1240AG Series provide the ruggedness and extended operating temperature range required in factories, warehouses, "big box" retail environments, and similar facilities. High transmit power, receive sensitivity, and delay spread for both 2.4-GHz and 5-GHz radios provide the long range and large coverage area consistent with these applications. 5-GHz radios are used as wireless bridges between access points for backhaul to the network.

Access points may be placed above ceilings or suspended ceilings, allowing antennas to be discreetly placed below drop ceilings. The UL 2043 rating of the Cisco Aironet 1240AG Series allows the access points to be placed above ceilings in plenum areas regulated by municipal fire codes. Public access applications such as large hotel buildings may also present a challenging RF environment; the antenna versatility of the Cisco Aironet 1240AG Series, together with industry-leading range and coverage, provides reliable performance for the most demanding environments.

Features and Benefits

Table 1 lists the features and benefits of Cisco Aironet 1240AG Series Access Points.

Table 1. Features and Benefits of Cisco Aironet 1240AG 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 compatibility with older 802.11b clients.
Dual RP-TNC Antenna Connectors for Both 2.4-GHz and 5-GHz Radios	Antenna connectors support a variety of Cisco 2.4-GHz and 5-GHz antennas, providing range and coverage versatility.
Link-Role Flexibility	Autonomous access points can function as an access point or bridge, whether set up as a single-band or dual-band platform, allowing each radio to be individually configured as an access point repeater, root bridge, non-root bridge, or workgroup bridge, enabling a broad array of applications.
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.
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) 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
Currently Supports 12 Non-Overlapping Channels, with Potentially up to 23 Channels	Lower potential interference with neighboring access points simplifies deployment. Fewer transmission errors deliver greater throughput.
Rugged Metal Housing	Metal case and rugged features support deployment in factories, warehouses, the outdoors (NEMA enclosure required), and other industrial environments.
UL 2043 Plenum Rating and Extended Operating Temperature	Supports installation in environmental airspaces such as areas above suspended ceilings.
Multipurpose and Lockable Mounting Bracket	Provides greater flexibility in installation options for site surveys, as well as theft deterrence.

Feature	Benefit
Both Local and Inline Power Supported, Including IEEE 802.1af PoE	Power can be supplied using the Ethernet cable, eliminating the need for costly electrical power line runs to remotely installed access points. The access points can be powered by IEEE 802.3af PoE, Cisco inline power switches, single port power injectors, or local power.
Hardware-Assisted AES Encryption	Provides high security without performance degradation.
Cisco Green Bulk Packaging	To reduce product packaging and preserve the environment, the Cisco Aironet 1240 Series may be ordered in a bulk package that includes 10 access points and 10 mounting kits.

Summary

Cisco Aironet 1240AG Series Access Points feature antenna connectors for greater range and coverage versatility using a broad selection of available Cisco antennas, as well as a rugged metal housing for operation over extended temperature ranges typical of industrial environments. Dual 802.11a and 802.11g radios offer a combined capacity of 108 Mbps, meeting the performance requirements of the most demanding applications, while hardware-assisted AES encryption provides uncompromised support for interoperable IEEE 802.11i and WPA2 security. The Cisco Aironet 1240AG Series delivers enterprise-class features for challenging RF environments.

Product Specifications

Table 2 lists the product specifications for Cisco Aironet 1240AG Series Access Points.

Table 2. Product Specifications for Cisco Aironet 1240AG Series Access Points

Item	Specification
Part Number for Individual Access Points	AIR-AP1242AG-x-K9 AIR-LAP1242AG-x-K9 **Regulatory domains**: (x = regulatory domain) • A = FCC • C = China • E = ETSI • I = Israel • J = 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-AP1242-x-K9-10 (Cisco IOS Software) • AIR-LAP1242-xK9-10 (Cisco Unified Wireless Network Software) **Note**: The Cisco Aironet 1242AG Series may be ordered with Cisco IOS Software to operate as an autonomous AP with Cisco Unified Wireless Network Software using LWAPP. When the 1242AG 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

Item	Specification	
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 5.35 GHz; 8 channels • 5470 to 5725 MHz; 11 channels **Israel** • 2.432 to 2.472 GHz; 9 channels • 5.15 to 5.35 GHz; 8 channels **Japan** • 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 **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 (not FCC)** • 2.412 to 2.462 GHz; 11 channels • 5.15 to 5.35, 5.725 to 5.825 GHz; 12 channels **Japan2** • 2.412 to 2.472 GHz; 13 channels OFDM • 2.412 to 2.484 GHz; 14 channels CCK • 5.15 to 5.35 GHz; 8 channels **Singapore** • 2.412 to 2.472 GHz; 13 channels • 5.15 to 5.35, 5.725 to 5.825 GHz; 12 channels **Taiwan** • 2.412 to 2.462 GHz; 11 channels • 5.25 to 5.35, 5.725 to 5.825 GHz; 7 channels	
Non-Overlapping Channels	• 802.11a: 12 channels (FCC; other regulatory domains support different numbers of 802.11a channels) • FCC currently supports 12 non-overlapping channels, with potentially up to 23 channels via a future firmware release depending on FCC rules	802.11b/g: 3 channels
Receive Sensitivity (Typical)	**802.11a** • 6 Mbps: –88 dBm • 9 Mbps: –87 dBm • 12 Mbps: –86 dBm • 18 Mbps: –85 dBm • 24 Mbps: –82 dBm • 36 Mbps: –79 dBm • 48 Mbps: –74 dBm • 54 Mbps: –73 dBm	**802.11g** • 1 Mbps: –96 dBm • 2 Mbps: –93 dBm • 5.5 Mbps: –91 dBm • 6 Mbps: –91 dBm • 9 Mbps: –85 dBm • 11 Mbps: –88 dBm • 12 Mbps: –83 dBm • 18 Mbps: –81 dBm • 24 Mbps: –78 dBm • 36 Mbps: –74 dBm • 48 Mbps: –73 dBm • 54 Mbps: –73 dBm

<table>
<tr><th>Item</th><th colspan="4">Specification</th></tr>
<tr><td>Available Transmit Power Settings
(Maximum Power Setting will Vary by Channel and According to Individual Country Regulations)</td><td colspan="2">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>802.11g
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>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 rowspan="2">Range (Typical)</td><td colspan="2">Indoor (Distance Across Open Office Environment):</td><td colspan="2">Outdoor:</td></tr>
<tr><td>802.11a:
85 ft (26 m) at 54 Mbps
150 ft (46 m) at 48 Mbps
210 ft (64 m) at 36 Mbps
230 ft (70 m) at 24 Mbps
260 ft (79 m) at 18 Mbps
280 ft (85 m) at 12 Mbps
310 ft (94 m) at 9 Mbps
330 ft (100 m) at 6 Mbps</td><td>802.11g:
105 ft (32 m) at 54 Mbps
180 ft (55 m) at 48 Mbps
260 ft (79 m) at 36 Mbps
285 ft (87 m) at 24 Mbps
330 ft (100 m) at 18 Mbps
355 ft (108 m) at 12 Mbps
365 ft (111 m) at 11 Mbps
380 ft (116 m) at 9 Mbps
410 ft (125 m) at 6 Mbps
425 ft (130 m) at 5.5 Mbps
445 ft (136 m) at 2 Mbps
460 ft (140 m) at 1 Mbps</td><td>802.11a:
100 ft (30 m) at 54 Mbps
300 ft (91 m) at 48 Mbps
425 ft (130 m) at 36 Mbps
500 ft (152 m) at 24 Mbps
550 ft (168 m) at 18 Mbps
600 ft (183 m) at 12 Mbps
625 ft (190 m) at 9 Mbps
650 ft (198 m) at 6 Mbps</td><td>802.11g:
120 ft (37 m) at 54 Mbps
350 ft (107 m) at 48 Mbps
550 ft (168 m) at 36 Mbps
650 ft (198 m) at 24 Mbps
750 ft (229 m) at 18 Mbps
800 ft (244 m) at 12 Mbps
820 ft (250 m) at 11 Mbps
875 ft (267 m) at 9 Mbps
900 ft (274 m) at 6 Mbps
910 ft (277 m) at 5.5 Mbps
940 ft (287 m) at 2 Mbps
950 ft (290 m) at 1 Mbps</td></tr>
<tr><td colspan="4">Measured with 2.2-dBi dipole antenna for 2.4 GHz, and 3.5-dBi omnidirectional antenna for 5 GHz.</td></tr>
<tr><td>Compliance</td><td colspan="4">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)
EN 60601-1-2 EMC requirements for the Medical Directive 93/42/EEC
Security:</td></tr>
</table>

Item	Specification
	• 802.11i, WPA2, WPA • 802.1X • AES, TKIP Other: • IEEE 802.11g and IEEE 802.11a • FCC Bulletin OET-65C • RSS-102 • EN 50155 and EN 50121-3-2 (Railway)
Antenna Connectors	2.4 GHz • Dual RP-TNC connectors 5 GHz • Dual RP-TNC connectors
Status LEDs	• Status LED indicates operating state, association status, error/warning condition, boot sequence, and maintenance status. • Ethernet LED indicates status of activity over the Ethernet. • Radio LED indicates status of activity over the radio.
Dimensions (W x L x H)	• 6.6 x 8.5 x 1.1 in. (16.76 x 21.59 x 2.79 cm)
Weight	• 2.0 lbs
Environmental	• Non-operating (storage) temperature: –40 to 185°F (– 40 to 85°C) • Operating temperature: –4 to 131°F (–20 to 55°C) • Operating humidity: 10 to 90 percent (non-condensing)
System Memory	• 32 MB RAM • 16 MB flash
Input Power Requirements	• 100 to 240 VAC; 50 to 60Hz (power supply) • 36 to 57 VDC (device)
Powering Options	• Local power • 802.3 AF switches • Cisco higher-power switches capable of supporting 13W or greater • Cisco Aironet power injectors (PWRINJ3 and PWRINJ-FIB) • Third-party PoE devices (must meet input power and power draw requirements)
Power Draw	12.95W maximum **Note:** 12.95W is the maximum power required at the powered device. If the access point is being used in a PoE configuration, the power drawn from the power sourcing equipment will be higher by some amount dependent on the length of the interconnecting cable. This additional power may be as high as 2.45W, bringing the total system power draw (access point and cabling) to 15.4W.
Warranty	One year
Wi-Fi Certification	

System Requirements

Table 3 lists the system requirements for Cisco Aironet 1240AG Series Access Points.

Table 3. System Requirements for Cisco Aironet 1240AG Series Access Points

Access Method	Description
Browser	Using the Web browser management GUI requires a computer running Internet Explorer Version 6.0 or later, or Netscape Navigator Version 7.0 or later.
PoE	Power sourcing equipment compliant with Cisco inline power or IEEE 802.3af, and providing at least 12.94W at 48 VDC

Ordering Information

To place an order, visit the Cisco Ordering Website at: http://www.cisco.com/en/US/ordering/index.shtml

Service and Support

Cisco Systems® offers a wide range of services programs to accelerate customer success. These innovative 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 1240AG Series, visit http://www.cisco.com/go/wireless or contact your local account representative.

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