



Wireless LAN

Wireless LAN at a Glance (IEEE 802.11 a/b/g)

Product	Features	Page
<i>Cisco Aironet 1130AG Series Access Point</i>	<ul style="list-style-type: none"> • With two high-performance radios with integrated antennas, these access points provide simultaneous support for the 802.11a and 802.11g standards, offering 108 Mbps of capacity for your growing WLAN • Cost-compelling solution for a high-capacity, high-security, enterprise-class WLAN • Ideal for easy deployment offices and similar facilities 	3-3
<i>Cisco Aironet 1240AG Series Access Point</i>	<ul style="list-style-type: none"> • Rugged enterprise-class AP designed for indoor industrial deployments and installations that require antenna versatility • Ideal for factories, warehouses and retailers • Broad operating temperature range and UL 2043 certification for plenum rating requirements set by local fire codes supports installation in environmental air spaces • Link-roll flexibility allows the AP to perform as a wireless bridge between access points for backhaul to the network 	3-5
<i>Cisco Aironet 1300 Series Outdoor Access Point/Bridge</i>	<ul style="list-style-type: none"> • Configurable for access point, bridge, or workgroup bridge roles • Support for both point-to-point or point-to-multipoint configurations • Industry leading range and throughput, supporting data rates up to 54 Mbps • Ruggedized enclosure optimized for harsh outdoor environments with extended operating temperature range • Integrated or optional external antennas for flexibility in deployment 	3-7
<i>Cisco Aironet 1500 Series Lightweight Outdoor Wireless Mesh Access Point</i>	<ul style="list-style-type: none"> • Enable cost-effective, scalable deployment of secure outdoor wireless LANs • Dual-band, simultaneous support for IEEE 802.11a and 802.11b/g standards • Employs a patent-pending Adaptive Wireless Path Protocol to form a dynamic wireless mesh network between remote access points 	3-9
<i>Cisco Aironet 802.11a/b/g Wireless CardBus and PCI Adapter</i>	<ul style="list-style-type: none"> • Secure network communications, with the Cisco Wireless Security Suite and support for Wi-Fi Protected Access (WPA) • Comprehensive utilities for flexible, easy configuration and management • High-performance 54 Mbps connectivity in the 2.4 and 5 GHz bands • Superior range and throughput • World mode for international roaming 	3-10
<i>Cisco Aironet 1400 Series Wireless Bridge</i>	<ul style="list-style-type: none"> • Support for both point-to-point or point-to-multipoint configurations • Range and throughput supporting data rates up to 54 Mbps • Enhanced security mechanisms based on 802.11 standards • Ruggedized enclosure optimized for harsh outdoor environments with extended operating temperature range 	3-12
<i>Cisco Antennas and Accessories</i>	<ul style="list-style-type: none"> • A wide array of options • FCC-approved directional and omni-directional antennas • Low-loss cable, mounting hardware, and other accessories available 	3-14
<i>Cisco 2100 Series Wireless LAN Controller</i>	<ul style="list-style-type: none"> • Ideal for enterprise branch wireless LAN deployments that require system-level security, scalability, and RF management • Leverages the LWAPP to centrally control Cisco Aironet Lightweight Access Points for WLAN performance optimization and automated network resiliency • Supports up to six lightweight access points making it a cost-effective solution for enterprise branch offices and small and medium-sized businesses 	3-18
<i>Cisco 4400 Series Wireless LAN Controller</i>	<ul style="list-style-type: none"> • Ideal for enterprise wireless LAN deployments that require system-level security, scalability, and RF management • Leverages the LWAPP to centrally control Cisco Aironet Lightweight Access Points for WLAN performance optimization and automated network resiliency • Available with 2 Gigabit Ethernet ports to support 12, 25, and 50 access points or with 4 Gigabit Ethernet ports to support 100 access points 	3-19

<i>Cisco Wireless Control System (WCS)</i>	<ul style="list-style-type: none"> • Complete platform for enterprise-wide WLAN systems management of the Cisco Unified Wireless Network • Wide range of tools for monitoring, configuring managing, and controlling the RF environment • Provides a centralized platform for managing a complete network of Cisco WLAN controllers, Cisco Aironet lightweight access points, and Cisco Wireless Location Appliances and the environment for voice over WLAN (VoWLAN) phones • It simplifies WLAN planning and deployment and delivers a cost effective way of managing and securing ongoing wireless operations. It supports built-in secure guest access • It interfaces with Cognio Spectrum Expert to detect non-Wi-Fi interference 	3-20
<i>Cisco Wireless Control System (WCS) Navigator</i>	<ul style="list-style-type: none"> • An aggregated platform for enhanced scalability, manageability, and visibility of large-scale implementations of the Cisco Unified Wireless Network • Centralizes the operational control and management of multiple Cisco WCS management platforms 	3-22
<i>Cisco Wireless Location Appliance</i>	<ul style="list-style-type: none"> • Advanced and scalable location tracking that simultaneously tracks thousands of wireless users and devices to within a few meters of their physical location indoors and to the closest access points outdoors • Integrated location tracking using existing unified wireless infrastructure, minimizing capital expenditures and helping ensure better WLAN visibility • Supports integration with a customizable set of location-based applications through tight and transparent integration with the appliance's open API • Part of the Cisco Location Solution that supports chokepoint-based notifications as well as receipt of telemetry, battery, and emergency group information from Cisco Compatible Extensions Wi-Fi tags 	3-23
<i>Cisco 500 Series Wireless Express Access Points</i>	<ul style="list-style-type: none"> • An affordable single-band 802.11g access point with integrated antennas • Delivers business class management, security, scalability and mobility services ideal for small or medium-sized businesses (SMBs) • Industry leading radio design that mitigates the effects of multi-path signal propagation for more consistent coverage over long distances • Supports standalone or controller-based modes to accommodate a diverse range of deployment and business mobility requirements. 	3-24
<i>Cisco 500 Series Wireless Express Mobility Controller</i>	<ul style="list-style-type: none"> • A high performance network appliance designed to optimize the wireless networks of small and medium-sized businesses (SMBs) • Cost-effectively supports up to six access points per controller and two controllers per network • Supports a wide range of industry standard authentication mechanisms to enable scalable security architectures and minimize security interoperability issues • Supports advanced mobility services such as secure guest Internet access and optimized voice over Wi-Fi 	3-26
<i>Cisco Configuration Assistant</i>	<ul style="list-style-type: none"> • A comprehensive configuration tool for the Smart Business Communications System portfolio • Simplifies the task of configuring, deploying, and administering the Cisco Mobility Express solution as well as Cisco routing, switching and Unified Communications call-routing and voicemail systems in a small to medium sized business network 	3-28
<i>CiscoWorks Wireless LAN Solution Engine and CiscoWorks Wireless Solution Engine Express</i>	<ul style="list-style-type: none"> • CiscoWorks WLSE is a hardware-based wireless LAN management solution that provides template-based configuration with user-defined groups to effectively manage a large number of stand-alone access points and wireless bridges • Monitors IEEE 802.1X authentication server availability • Enhances security management through mis-configuration detection on stand-alone access points and bridges 	9-23
<i>Product Ordering Web site</i>	To place an order, visit the Cisco Ordering Web site: http://www.cisco.com/en/US/ordering/index.shtml	

Cisco Aironet 1130AG Series Access Point

The Cisco Aironet 1130AG Series packages high capacity, high security, and enterprise-class features delivering WLAN access for a low total cost of ownership. Designed for WLAN coverage in offices and similar RF environments, this unobtrusive access point features integrated antennas and dual IEEE 802.11a/g radios for robust and predictable coverage, delivering a combined capacity of 108 Mbps. The competitively priced Cisco Aironet 1130AG Series is ready to install and easy to manage, reducing the cost of deployment and ongoing maintenance. The Aironet 1130AG Series is available in a lightweight version, an autonomous version that can be field-upgraded to lightweight operation, and a single-band 802.11g version for use in regulatory domains that do not allow 802.11a/5 GHz operation



When to Sell

Sell This Product

Cisco Aironet 1130AG Series Access Point

When a Customer Needs These Features

- A high-capacity and high-security WLAN in the enterprise office
- Two high-performance radios providing simultaneous support for the 802.11a and 802.11g standards offering 108 Mbps capacity for your growing WLAN
- A low-profile access point that blends into the environment and is easy to deploy

Key Features

- IEEE 802.11a and 802.11g radios with simultaneous dual band support provides 108 Mbps capacity. Works with dual band clients to optimize usage of network bandwidth while providing backwards compatibility with 802.11b clients; Complies with 802.11i security standards and is WPA2 certified; Incorporates AES encryption in hardware;
- Available in an 802.11g only version for countries that do not allow 5 GHz.
- Provides robust signals to long distances and mitigates the effects of multipath signal propagation for more consistent coverage
- Orderable supporting either Cisco IOS® Software or the Lightweight Access Point Protocol (LWAPP); 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
- Variable transmit power settings that allows access point coverage to be tuned for differing requirements
- Integrated 4.5 dBi antennas—Complete system deployable out of the box without external antennas; specifically designed to provide omnidirectional coverage for offices and similar radio frequency environments. Low 0.5 mW setting supports closer spacing of access points in high density deployments
- Wi-Fi Certified

Competitive Products

- 3Com Dual-mode access points
- Agere Dual-mode access points
- Alcatel OmniAccess
- Aruba Dual-mode access points: 52, 6X
- Avaya Dual-mode access points
- Colubris Dual-mode access points
- Enterasys Dual-mode access points
- Lucent Dual-mode access points
- Netgear Dual-mode access points
- Proxim/ORINOCO Dual-mode access points
- Symbol Technologies Dual-mode access points
- Symbol Technologies Access Points, 100, 200, 300

Specifications

Features	Cisco Aironet 1130AG Series Access Point
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
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
Network standard	IEEE 802.11a, 802.11b and 802.11g
Uplink	Autosensing 802.3 10/100BaseT Ethernet
Non-overlapping channels	802.11a—Up to 19; 802.11b/g—3
SNMP compliance	MIB I and MIB II
Antennas	2.4 GHz: Gain 3.0 dBi, Horizontal Beamwidth 360°; 5 GHz: Gain 4.5 dBi, Horizontal Beamwidth 360°

Features		Cisco Aironet 1130AG Series Access Point	
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), 5.15 to 5.35 GHz, 8 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		
Receive sensitivity	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; 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		
Available transmit power settings	802.11a: OFDM: 50 mW (17 dBm), 32 mW (15 dBm), 25 mW (14 dBm), 10 mW (11 dBm), 5 mW (8 dBm), 3 mW (5 dBm), 2 mW (2 dBm), 1 mW (-1 dBm); CCK—100 mW (20 dBm), 50 mW (17 dBm), 25 mW (14 dBm), 12 mW (11 dBm), 6 mW (8 dBm), 3 mW (5 dBm), 2 mW (2 dBm), 1 mW (-1 dBm); OFDM—50 mW (17 dBm), 25 mW (14 dBm), 10 mW (11 dBm), 5 mW (8 dBm), 3 mW (5 dBm), 1 mW (2 dBm), 1 mW (-1 dBm) Maximum power setting will vary by channel and according to individual country regulations.		
Range	Indoor (Distance across open office environment): 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) @ 6 Mbps; 802.11g: 1000 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) @ 9 Mbps, 400 ft (122 m) @ 6 Mbps Outdoor: 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) @ 6 Mbps; 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 Ranges and actual throughput vary based upon numerous environmental factors so individual performance may differ.		
Compliance	Customers are responsible for verifying approval for use in their country. See http://www.cisco.com/go/aironet/compliance		
Security architecture client authentication and encryption (Cisco Wireless Security Suite supporting WPA and WPA2)	Security Standards: WPA, WPA2 (802.11), Cisco TKIP, Cisco message integrity check (MIC), IEEE 802.11 WEP keys of 40 bits and 128 bits 802.1X EAP types: EAP-FAST, PEAP-GTC, PEAP-MSCHAP, EAP-TLS, EAP-TTLS, 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 x 7.5 x 1.3 in. (19.1 x 19.1 x 3.3 cm)		
Weight	1.5 lbs. (0.67 kg)		
Environmental	32-104° F (0-40° C); 10-90% humidity (non-condensing)		
System Memory	32 MB RAM; 16 MB FLASH		
Input Power Req	100-240 VAC 50-60Hz (power supply); 36-57 VDC (device)		
Power Draw	12.2 watts, max		
Warranty	One year		

Selected Part Numbers and Ordering Information

Cisco Aironet 1130AG Series Access Point

AIR-AP1131AG-A-K9	802.11a/g Non-modular IOS AP; Integrated Antennas; Israel Cnfg
AIR-AP1131AG-C-K9	802.11a/g Non-modular IOS AP; Integrated Antennas; Korea Cnfg
AIR-AP1131AG-E-K9	802.11a/g Non-modular IOS AP; Integrated Antennas; Japan2 Cnfg
AIR-AP1131AG-I-K9	802.11a/g Non-modular IOS AP; Integrated Antennas; Israel Cnfg
AIR-AP1131AG-J-K9	802.11a/g Non-modular IOS AP; Integrated Antennas; Singapore Cnfg
AIR-AP1131AG-K-K9	802.11a/g Non-modular IOS AP; Integrated Antennas; Korea Cnfg
AIR-AP1131AG-N-K9	802.11a/g Non-modular IOS AP; Integrated Antennas; Taiwan Cnfg
AIR-AP1131AG-P-K9	802.11a/g Non-modular IOS AP; Integrated Antennas; Japan2 Cnfg
AIR-AP1131AG-S-K9	802.11a/g Non-modular IOS AP; Integrated Antennas; Singapore Cnfg
AIR-AP1131AG-T-K9	802.11a/g Non-modular IOS AP; Integrated Antennas; Taiwan Cnfg
AIR-LAP1131AG-A-K9	802.11a/g Non-modular LWAPP AP; Integrated Antennas; FCC Cnfg
AIR-LAP1131AG-C-K9	802.11a/g Non-modular LWAPP AP; Integrated Antennas; China Cnfg
AIR-LAP1131AG-E-K9	802.11a/g Non-modular LWAPP AP; Integrated Antennas; ETSI Cnfg
AIR-LAP1131AG-I-K9	802.11a/g Non-modular LWAPP AP; Integrated Antennas; Israel Cnfg
AIR-LAP1131AG-K-K9	802.11a/g Non-modular LWAPP AP; Integrated Antennas; Korea Cnfg
AIR-LAP1131AG-N-K9	802.11a/g Non-modular LWAPP AP; Integrated Antennas; N. America Cnfg (not FCC)

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AIR-LAP1131AG-P-K9	802.11a/g Non-modular LWAPP AP; Integrated Antennas; Japan2 Cnfg
AIR-LAP1131AG-S-K9	802.11a/g Non-modular LWAPP AP; Integrated Antennas; Singapore Cnfg
AIR-LAP1131AG-T-K9	802.11a/g Non-modular LWAPP AP; Integrated Antennas; Taiwan Cnfg
<i>Cisco Aironet 1130G Series Access Point</i>	
AIR-AP1131G-A-K9	802.11g Non-modular IOS AP; Integrated Antennas; Israel Cnfg
AIR-AP1131G-E-K9	802.11g Non-modular IOS AP; Integrated Antennas; Japan2 Cnfg
AIR-AP1131G-P-K9	802.11g Non-modular IOS AP; Integrated Antennas; Japan2 Cnfg
AIR-LAP1131G-A-K9	802.11g Non-modular LWAPP AP; Integrated Antennas; FCC Cnfg
AIR-LAP1131G-E-K9	802.11g Non-modular LWAPP AP; Integrated Antennas; ETSI Cnfg
AIR-LAP1131G-P-K9	802.11g Non-modular LWAPP AP; Integrated Antennas; Japan2 Cnfg

For More Information

See the Cisco Wireless Web site: <http://www.cisco.com/go/wireless>

Cisco Aironet 1240AG Series Access Point

Cisco Aironet 1240AG Series IEEE 802.11a/b/g access points deliver the versatility, high capacity, security, and enterprise-class features demanded by WLAN customers. It is designed specifically for challenging RF environments like 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).



When to Sell

Sell This Product

Cisco Aironet 1240AG Series Access Point

When a Customer Needs These Features

- Rugged enterprise-class AP designed for indoor industrial deployments and installations that require antenna versatility
- For factories, warehouses and retailers
- Link-roll flexibility allowing the AP to perform as a wireless bridge between access points for backhaul to the network

Key Features

- Integrated 802.11a/b/g radios
- Available in an 802.11g only version for countries that do not allow 5 GHz.
- Connectors for a variety of both 2.4 and 5GHz antennas
- Orderable as Autonomous or Lightweight
- May be configured to function as an access point or bridge enabling a broad array of applications
- 4 Power options offering deployment flexibility and cost savings -802.3af, Cisco legacy PoE, Cisco Power Injector or local power supply

Competitive Products

- 3Com Dual-mode access points
- Agere Dual-mode access points
- Alcatel OmniAccess
- Aruba Dual-mode access points
- Aruba Dual-mode access points 52, 6X
- Avaya Dual-mode access points
- Colubris Dual-mode access points
- Enterasys Dual-mode access points
- Lucent Dual-mode access points
- Netgear Dual-mode access points
- Proxim/ORINOCO Dual-mode access points
- Symbol Technologies Dual-mode access points
- Symbol Technologies Access Points, 100, 200, 300

Specifications

Features	Cisco Aironet 1240AG Series Access Point
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, 54 Mbps; 802.11g—1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps
Network Standards	IEEE 802.11a/b/g
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; 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; 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 5.25 GHz and 5.725 to 5.825 GHz-8 channels; Taiwan: 2.412 to 2.462 GHz-11 channels, 5.25 to 5.35 GHz and 5.725 to 5.825 GHz-8 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	802.11a: 6 Mbps: -87 dBm; 9 Mbps: -87 dBm; 12 Mbps: -85 dBm; 18 Mbps: -84 dBm; 24 Mbps: -81 dBm; 36 Mbps: -78 dBm; 48 Mbps: -73 dBm; 54 Mbps: -72 dBm 802.11g: 6 Mbps: -90 dBm; 9 Mbps: -84 dBm; 12 Mbps: -82 dBm; 18 Mbps: -80 dBm; 24 Mbps: -77 dBm; 36 Mbps: -73 dBm; 48 Mbps: -72 dBm; 54 Mbps: -72 dBm
Range ¹	Indoor-802.11a: 85 ft (26 m) @ 54 Mbps; 150 ft (46 m) @ 48 Mbps; 210 ft (64 m) @ 36 Mbps; 230 ft (70 m) @ 24 Mbps; 260 ft (79 m) @ 18 Mbps; 280 ft (85 m) @ 12 Mbps; 310 ft (94 m) @ 9 Mbps; 330 ft (100 m) @ 6 Mbps; 802.11g: 105 ft (32 m) @ 54 Mbps; 180 ft (55 m) @ 48 Mbps; 260 ft (79 m) @ 36 Mbps; 285 ft (87 m) @ 24 Mbps; 330 ft (100 m) @ 18 Mbps; 355 ft (108 m) @ 12 Mbps; 365 ft (111 m) @ 11 Mbps; 380 ft (116 m) @ 9 Mbps; 410 ft (125 m) @ 6 Mbps; 425 ft (130 m) @ 5.5 Mbps; 445 ft (136 m) @ 2 Mbps; 460 ft (140 m) @ 1 Mbps Outdoor-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) @ 6 Mbps; 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;
Antenna	2.4 GHz: Dual RP-TNC connectors; 5 GHz: Dual RP-TNC connectors
LEDs	Status LED indicates operating state, association status, error/warning condition, boot sequence, and maintenance status; Ethernet LED indicates activity over the Ethernet, status; Radio LED indicates activity over the radio, status
Dimensions (H x W x D)	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/noncondensing humidity: 10 to 90 percent
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)
Power Draw	Local power: 802.3 AF switches; Cisco legacy PoE switches; Cisco Aironet power Injectors (PWRINJ3 and PWRINJ-FIB); Third-party PoE devices (must meet input power and power draw requirements)
Power Draw	12.95W ² maximum
Warranty	One year

1. Ranges and actual throughput vary based upon numerous environmental factors so individual performance may differ
2. 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 + cabling) to 15.4W.

Selected Part Numbers and Ordering Information

Cisco Aironet 1240AG Series Access Point

AIR-AP1242AG-A-K9	802.11a/g Non-modular Cisco IOS access point; RP-TNC; FCC configuration
AIR-AP1242AG-C-K9	802.11a/g Non-modular Cisco IOS access point; RP-TNC; China configuration
AIR-AP1242AG-E-K9	802.11a/g Non-modular Cisco IOS access point; RP-TNC; ETSI configuration
AIR-AP1242AG-I-K9	802.11a/g Non-modular Cisco IOS access point; RP-TNC; Israel configuration
AIR-AP1242AG-J-K9	802.11a/g Non-modular Cisco IOS access point; RP-TNC; Japan configuration
AIR-AP1242AG-K-K9	802.11a/g Non-modular Cisco IOS access point; RP-TNC; Korea configuration
AIR-AP1242AG-N-K9	802.11a/g Non-modular Cisco IOS access point; RP-TNC; North America configuration (not FCC)
AIR-AP1242AG-P-K9	802.11a/g Non-modular Cisco IOS access point; RP-TNC; Japan2 configuration
AIR-AP1242AG-S-K9	802.11a/g Non-modular Cisco IOS access point; RP-TNC; Singapore configuration
AIR-AP1242AG-T-K9	802.11a/g Non-modular Cisco IOS access point; RP-TNC; Taiwan configuration
AIR-LAP1242AG-A-K9	802.11ag Non-modular LWAPP access point; RP-TNC; FCC configuration
AIR-LAP1242AG-C-K9	802.11ag Non-modular LWAPP access point; RP-TNC; China configuration
AIR-LAP1242AG-E-K9	802.11ag Non-modular LWAPP access point; RP-TNC; ETSI configuration
AIR-LAP1242AG-I-K9	802.11ag Non-modular LWAPP access point; RP-TNC; Israel configuration
AIR-LAP1242AG-K-K9	802.11ag Non-modular LWAPP access point; RP-TNC; Korea configuration
AIR-LAP1242AG-N-K9	802.11ag Non-modular LWAPP access point; RP-TNC; North America configuration (not FCC)
AIR-LAP1242AG-P-K9	802.11ag Non-modular LWAPP access point; RP-TNC; Japan2 configuration

Chapter 3

AIR-LAP1242AG-S-K9	802.11ag Non-modular LWAPP access point; RP-TNC; Singapore configuration
AIR-LAP1242AG-T-K9	802.11ag Non-modular LWAPP access point; RP-TNC; Taiwan configuration
<i>Cisco Aironet 1240G Series Access Point</i>	
AIR-AP1242G-A-K9	802.11g non-modular Cisco IOS access point; RP-TNC; FCC configuration
AIR-AP1242G-E-K9	802.11g non-modular Cisco IOS access point; RP-TNC; ETSI configuration
AIR-AP1242G-P-K9	802.11g non-modular Cisco IOS access point; RP-TNC; Japan2 configuration
AIR-LAP1242G-A-K9	802.11g non-modular LWAPP access point; RP-TNC; FCC configuration
AIR-LAP1242G-E-K9	802.11g non-modular LWAPP access point; RP-TNC; ETSI configuration
AIR-LAP1242G-P-K9	802.11g non-modular LWAPP access point; RP-TNC; Japan2 configuration

1. This is only a small subset of all parts available via URL listed under "For More Information." Some parts have restricted access or are not available through distribution channels. Resellers: For latest part number and pricing info, see the Distribution Product Reference Guide at: <http://www.cisco.com/dprg> (limited country availability)

For More Information

See the Cisco Wireless Web site: <http://www.cisco.com/go/wireless>

Cisco Aironet 1300 Series

The Cisco Aironet 1300 Series is an 802.11g access point and bridge that provides high-speed and cost-effective wireless connectivity between multiple fixed or mobile networks and clients.



When to Sell

Sell This Product
Cisco Aironet 1300 Series

When a Customer Needs These Features

- Configurable for access point, bridge, or workgroup bridge roles
- Support for both point-to-point or point-to-multipoint configurations
- Industry leading range and throughput, supporting data rates up to 54 Mbps
- Enhanced security mechanisms based on 802.1X standards
- Ruggedized enclosure optimized for harsh outdoor environments with extended operating temperature range

Key Features

- Network connections within a campus area; Outdoor infrastructure for mobile networks and users; Public access for outdoor areas
- Supports temporary networks for portable or military operations
- Supports the 802.11g standard providing 54-Mbps data rates with secure technology while maintaining full backward compatibility with legacy 802.11b devices
- Easy maintenance and installation by integrating it with your wired network via SWAN solution
- Investment protection with future Cisco IOS Software upgrades
- The Cisco Unified Wireless Network simplifies wireless LAN deployment and management by providing clear visibility and dynamic control of the RF environment
- Operates as a wireless bridge, access point, or a workgroup bridge
- Provides ongoing savings of leased-line expenses, a method to connect networks despite physical barriers such as lakes or highways, and rapid deployment of network connections
- Wi-Fi Certified in Access Point mode

Competitive Products

- 3Com wireless outdoor bridges
- D-Link bridges

Specifications

<i>Features</i>	<i>Cisco Aironet 1300 Series</i>
<i>Compatibility</i>	Access Point—Compatible with any Wi-Fi Certified client device for basic capability; Compatible with Cisco Aironet clients and Cisco Compatible clients for extended capability Workgroup Bridge—Supports operation with Cisco Aironet access points and Cisco bridges
<i>Air interface standard¹</i>	IEEE 802.11b or IEEE 802.11g

Features		Cisco Aironet 1300 Series	
Frequency band	2.412 to 2.462 GHz (FCC); 2.412 to 2.472 GHz (ETSI); 2.412 to 2.472 GHz (TELEC)		
Wireless modulation	802.11b—Direct Sequence Spread Spectrum (DSSS): Differential Binary Phase Shift Keying (DBPSK) at 1 Mbps; Differential Quadrature Phase Shift Keying (DQPSK) at 2 Mbps; Complementary Code Keying (CCK) at 5.5 and 11 Mbps 802.11g—Orthogonal Frequency Divisional Multiplexing (OFDM): BPSK at 6 and 9 Mbps; QPSK at 12 and 18 Mbps; 16-quadrature amplitude modulation (QAM) at 24 and 36 Mbps; 64-QAM at 48 and 54 Mbps		
Media access protocol	Carrier Sense Multiple Access/Collision Avoidance (CSMA/CA)		
Operating channels	802.11b/g—ETSI: 13; Americas: 11; TELEC (Japan): 13		
Lightweight Access Point Protocol	A network protocol for lightweight access points that also provides for centralized management.		
Non-overlapping channels	3		
Security	Bridge—Authentication: 802.1X support including LEAP to yield mutual authentication and dynamic per-user, per-session encryption keys; Encryption: Cisco TKIP, key hashing (per-packet keying) and message, Integrity Check (MIC), AES-ready Access Point: Authentication: 802.1X support including LEAP, PEAP, EAP Message Digest 5 (EAP MD5), EAP TLS, and EAP FAST to yield mutual authentication and dynamic per-user, per-session encryption keys; Encryption: Cisco TKIP and WPA TKIP; key hashing (per-packet keying) and MIC; AES-ready Workgroup-Bridge—Authentication: 802.1X support including LEAP to yield mutual authentication and dynamic per-user, per-session encryption keys; Encryption: Cisco TKIP, key hashing (per-packet keying) and MIC, AES-ready		
SNMP compliance	Versions 1 and 2		
Feature	AIR-BR1310G-x-K9	AIR-BR1310G-x-K9-R	
Available transmit power settings²	802.11b: 100 mW (20 dBm), 50 mW (17 dBm), 30 mW (15 dBm), 20 mW (13 dBm), 10 mW (10 dBm), 5 mW (7 dBm), 1 mW (0 dBm); 802.11g: 30 mW (15 dBm); 20 mW (13 dBm); 10 mW (10 dBm); 5 mW (7 dBm); 1 mW (0 dBm)	Same as AIR-BR1310G-x-K9	
Maximum operational receive level	-20 dBm	Same as AIR-BR1310G-x-K9	
Maximum survivable receive level	10 dBm	Same as AIR-BR1310G-x-K9	
Receive sensitivity (10 percent with 3200-byte packets)	1 Mbps: -94 dBm, 2 Mbps: -91 dBm, 5.5 Mbps: -89 dBm, 11 Mbps: -85 dBm, 6 Mbps: -90 dBm, 9 Mbps: -89 dBm, 12 Mbps: -86 dBm, 18 Mbps: -84 dBm, 24 Mbps: -81 dBm, 36 Mbps: -77 dBm; 48 Mbps: -73 dBm, 54 Mbps: -72 dBm	Same as AIR-BR1310G-x-K9	
Access-point role (Outdoor range)	Americas: 865 feet (260 meters) at 54 Mbps, 3465 feet (1055 meters) at 11 Mbps; ETSI: 150 feet (45 meters) at 54 Mbps, 775 feet (235 meters) at 11 Mbps; TELEC: 485 feet (145 meters) at 54 Mbps, 1095 feet (330 meters) at 11 Mbps Note: Access Point with 13 dBi integrated antenna	Americas: 350 feet (105 meters) at 54 Mbps, 1410 feet (430 meters) at 11 Mbps; ETSI: 195 feet (60 meters) at 54 Mbps, 630 feet (190 meters) at 11 Mbps; TELEC: 195 feet (60 meters) at 54 Mbps, 445 feet (135 meters) at 11 Mbps Note: Access Point with 5.2dBi patch antenna and Cisco clients	
Bridge role (Point-to-point range)³	Americas: 1.3 miles (2 km) at 54 Mbps, 9 miles (15 km) at 11 Mbps; EMEA: 0.2 miles (0.36 km) at 54 Mbps, 2.3 miles (3.5 km) at 11 Mbps; TELEC: 0.7 miles (1.1 km) at 54 Mbps, 3.2 miles (5 km) at 11 Mbps Note: 13 dBi integrated antenna at root and non-root bridge	Americas: 4.5 miles (7 km) at 54 Mbps, 14 miles (23 km) at 11 Mbps; EMEA: 5.5 miles (9 km) at 11 Mbps; TELEC: 4.5 miles (7 km) at 54 Mbps, 12 miles (20 km) at 11 Mbps Note: 21-dBi dish antenna at root and non-root bridge	
Bridge role (Point-to-multipoint range)³	Americas: 1.1 miles (1.8 km) at 54 Mbps, 8 miles (13 km) at 11 Mbps; EMEA: 0.25 miles (0.4 km) at 54 Mbps, 1.1 miles (1.8 km) at 11 Mbps; TELEC: 0.8 miles (1.3 km) at 54 Mbps, 3.6 miles (5.8 km) at 11 Mbps Note: 14-dBi sector antenna at root and 13dBi integrated antenna at non-root	Americas: 2.0 miles (3.3 km) at 54 Mbps, 10 miles (16 km) at 11 Mbps; EMEA: 2.5 miles (4 km) at 11 Mbps; TELEC: 2.0 miles (3.3 km) at 54 Mbps, 9.0 miles (14 km) at 11 Mbps Note: 14-dBi sector at root and 21-dBi dish at non-root	
Features	AIR-BR1310G-x-K9 and AIR-BR1310G-x-K9-R	AIR-PWRINJ-BLR2 and AIR-PWRINJ-BLR2T	
Dimensions (H x W x D)	8 x 8.1 x 3.12 in. (20.3 x 20.57 x 7.87 cm)		4.62 x 4.76 x 1.07 in. (11.73 x 12.09 x 2.71 cm)
Weight	2.5 lb (1.25 kg)		2 lb (1 kg)
Operational temperature	-22½ to 131½°F (-30½ to 55½°C)		
Storage temperature	-40½ to 185½°F (-40½ to 85½°C)		
Operational altitude	13,800 ft (4206 m)		
Storage altitude	16,000 ft (4877 m)		
Humidity	0 to 100% at 100°F (38°C) (condensing)		0 to 90% at 100°F (38°C) (non-condensing)
Warranty	One Year		

1. Bridge mode has enhancements to the standard to allow longer-range bridging communication
2. Maximum power setting will vary according to individual country regulations
3. The distances referenced here are approximations and should be used for estimation purposes only.

Selected Part Numbers and Ordering Information

Cisco Aironet 1300 Series

AIR-BR1310G-X-K9	2.4 GHz (802.11g) Outdoor Access Point /Bridge with integrated patch antenna
AIR-BR1310G-X-K9-R	2.4 GHz (802.11g) Outdoor Access Point /Bridge with RP-TNC type connector
AIR-LAP1310G-X-K9	2.4 GHz (802.11g) Outdoor Lightweight Access Point /Bridge with integrated patch antenna
AIR-LAP1310G-X-K9	2.4 GHz (802.11g) Outdoor Lightweight Access Point /Bridge with RP-TNC type connector

For More Information

See the Cisco Wireless Web site: <http://www.cisco.com/go/wireless>

Cisco Aironet 1500 Series Lightweight Outdoor Wireless Mesh Access Point



Cisco Aironet 1500 Series lightweight outdoor mesh access points enable cost-effective, scalable deployment of secure outdoor wireless LANs. With dual-band, simultaneous support for IEEE 802.11a and 802.11b/g standards, the Cisco Aironet 1500 Series employs a patent-pending Adaptive Wireless Path Protocol to form a dynamic wireless mesh network between remote access points, and delivers secure wireless access with the total lowest cost of ownership.

When to Sell

Sell This Product When a Customer Needs These Features

<i>Cisco Aironet 1500 Series Lightweight Outdoor Wireless Mesh Access Point</i>	<ul style="list-style-type: none"> • Network connections within a campus area • Outdoor infrastructure for mobile users • Public access for outdoor areas
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Key Features

- Adaptive Wireless Path Protocol
- Integrated dual radio design
- Configurable for access point and bridging
- Support for point-to-point, point-to-multipoint and mesh configurations
- Standards-based LWAPP

Competitive Products

- | | |
|---|--|
| <ul style="list-style-type: none"> • BelAir 50C, 100C and 200C • Fireside HotPort Mesh Nodes • Mesh Dynamics Mesh Access Point | <ul style="list-style-type: none"> • Nortel Wireless Mesh Access Point • Strix Systems OWS Mesh Access Point |
|---|--|

Specifications

Features	Cisco Aironet 1500 Series
Wireless Standards	802.11a; 802.11b/g
Media Access Protocol	Carrier Sense Multiple Access/Collision Avoidance (CSMA/CA)
Data Rates and Modulation	802.11a: 54, 48, 36, 24, 18, 12, 9, 6 Mbps, Orthogonal Frequency Division Multiplexing (OFDM); 802.11b: 11, 5.5, 2, 1 Mbps, Direct Sequence Spread Spectrum (DSSS); 802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps, OFDM
Frequency Band and Operating Channels	802.11a: 5.725–5.850 GHz 5 channels; 5.725–5.850 GHz 5 channels 802.11b/g: 2.412–2.462 GHz; 11 channels; 2.412–2.462 GHz; 11 channels Regulatory Version: -A; -N
Transmit Power ¹	Maximum: 802.11a: 28 dBm; 802.11b: 24 dBm; 802.11g: 24 dBm Available power settings are at the following percentages of the above maximum transmit power: 100, 50, 25, 12.5, 6.25
Receive Sensitivity	802.11a: 6 Mbps: -87 dBm; 9 Mbps: -87 dBm; 12 Mbps: -86 dBm; 18 Mbps: -84 dBm; 24 Mbps: -80 dBm; 36 Mbps: -76 dBm; 48 Mbps: -72 dBm; 54 Mbps: -71 dBm; 802.11b: 1 Mbps: -90 dBm; 2 Mbps: -89 dBm; 5.5 Mbps: -87 dBm; 11 Mbps: -84 dBm; 802.11g: 6 Mbps: -88 dBm; 9 Mbps: -87 dBm; 12 Mbps: -87 dBm; 18 Mbps: -84 dBm; 24 Mbps: -80 dBm; 36 Mbps: -78 dBm; 48 Mbps: -72 dBm; 54 Mbps: -71 dBm;
Network Interface	802.3u 10/100 Ethernet, autosensing

Features	<i>Cisco Aironet 1500 Series</i>
Networking Features	16 Broadcast SSIDs; HTTP web page re-direct
Management	LWAPP-based; Managed by Cisco Wireless LAN Controller
Security	Wireless Bridging/Mesh: X.509 digital certificates; MAC address authentication; Hardware-assisted AES encryption Wireless Access: 802.11i; 802.1x authentication, including EAP-SIM, EAP-PEAP, EAP-TLS, EAP-TTLS, Cisco LEAP; Hardware-assisted AES, WPA, Temporal Key Integrity Protocol-Message Identity Check (TKIP-MIC) encryption; VPN passthrough; IPSec, L2TP; MAC address filtering
Compliance	Customers are responsible for verifying approval for use in their country. Please see http://www.cisco.com/go/aironet/compliance to verify approval and to identify the regulatory domain that corresponds to a particular country. All regulatory domains may not have been approved. As they are approved, the part numbers will be available on the Global Price List.
Dimensions	15.0i x 7.3i x 5.7i (25.4 cm x 18.5 cm x 14.5 cm) (including antenna mount)
Weight	10 lbs. (4.55 kg)
Operating Temperature	-30 to 55°C (-22 to 131°F)
Storage Temperature	-50 to 85°C (-58 to 185°F)
Environmental Ratings	IP66; NEMA 4
Immunity	<= 5 mJ for 6kV/3kA @ 8/20 ms waveform; ANSI/IEEE C62.41; EN61000-4-5 Level 4 AC Surge Immunity; EN61000-4-4 Level 4 Electrical Fast Transient Burst Immunity; EN61000-4-3 Level 4 EMC Field Immunity; EN61000-4-2 Level 4 ESD Immunity; EN60950 Overvoltage Category IV
Power	95-260 VAC, 47-63 Hz; Power over Ethernet: 48 VDC, +/-10 percent

1. Maximum transmit power will vary by channel, data rate, and individual country regulations

Selected Part Numbers and Ordering Information

Cisco Aironet 1500 Series

AIR-LAP1510AG-A-K9	Cisco Aironet 1510AG Lightweight Outdoor Mesh Access Point, FCC configuration
AIR-LAP1510AG-N-K9	Cisco Aironet 1510AG Lightweight Outdoor Mesh Access Point, China configuration
AIR-LAP1510AG-E-K9	Cisco Aironet 1510AG Lightweight Outdoor Mesh Access Point, ETSI configuration
AIR-LAP1510AG-K-K9	Cisco Aironet 1510AG Lightweight Outdoor Mesh Access Point, Korea configuration
AIR-LAP1510AG-N-K9	Cisco Aironet 1510AG Lightweight Outdoor Mesh Access Point, non-FCC configuration
AIR-LAP1510AG-P-K9	Cisco Aironet 1510AG Lightweight Outdoor Mesh Access Point, TELEC configuration
AIR-LAP1510AG-S-K9	Cisco Aironet 1510AG Lightweight Outdoor Mesh Access Point, Singapore configuration

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For More Information

See the Cisco Wireless Web site: <http://www.cisco.com/go/wireless>

Cisco Aironet 802.11a/b/g Wireless Adapters

The Cisco Aironet IEEE 802.11a/b/g Wireless CardBus and PCI Adapters provides high-performance 54 Mbps connectivity in the 2.4 and 5 GHz bands that combines the freedom of wireless connectivity with the performance, security, and manageability that businesses require.



When to Sell

Sell This Product When a Customer Needs These Features

- | | |
|---|--|
| <i>Cisco Aironet 802.11a/b/g Wireless CardBus Adapter</i> | <ul style="list-style-type: none"> • Ability to operate in a mixed mode environment • Mobility within the enterprise to increase productivity, as an addition or alternative to wired networks or need flexibility for frequent LAN wiring changes • Support for Cisco Compatible Extensions with a Cisco product |
|---|--|

Key Features

- Secure network communications using the Cisco Secure Wireless Solution
- Includes the Aironet Desktop Utility (ADU), Aironet System Tray Utility (ASTU), and Aironet Client Administration Utility (ACAU)
- World mode for international roaming; Superior range and throughput
- Supports single 802.11b coverage, single 802.11g coverage, single 802.11a coverage, dual-mode 802.11a/g coverage or tri-mode 802.11a/b/g coverage

- Wi-Fi Certified; Support for WPA
- PCI Adapter—Optimal placement for maximum performance using dual-band 2.4/5 GHz 1 dBi effective gain antenna has a 2-meter cable
- PCI Adapter—Provides a low-profile form factor and two-meter cable length providing flexibility for installation in low-profile devices, such as slim desktops and point-of-sale (POS) devices.
- Support for Cisco Compatible Extensions version 5 and earlier

Specifications

Feature	Cisco Aironet 802.11a/b/g Wireless CardBus Adapter	Cisco Aironet 802.11a/b/g Wireless PCI Adapter
Form Factor	CardBus Type II	Standard and Low Profile Type II PCI
Interface	32-bit CardBus with standard 68-pin connector; PC-Card Rev. 7.0 compliant	Standard PCI Interface, PCI Rev. 2.3 compliant
Data Rates Supported	1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54 Mbps	
Network Standard	IEEE 802.11a/b/g	
Operating Voltage	3.3 V (±0.3 V)	
Media Access Protocol	Carrier-Sense Multiple Access w/ Collision Avoidance (CSMA/CA)	
Wireless Medium	802.11g: Direct Sequence Spread Spectrum (DSSS) and Orthogonal Frequency Divisional Multiplexing (OFDM); 802.11a: OFDM	
Modulation	802.11b: DSSS--Differential Binary Phase Shift Keying (DBPSK) @ 1 Mbps; Differential Quadrature Phase Shift Keying (DQPSK) @ 2 Mbps; Complementary Code Keying (CCK) @ 5.5 and 11 Mbps 802.11g and 802.11a: OFDM--BPSK @ 6 and 9 Mbps; QPSK @ 12 and 18 Mbps; 16-Quadrature Amplitude Modulation (QAM) @ 24 and 36 Mbps; 64-QAM @ 48 and 54 Mbps	
Frequency Bands	2.40 to 2.4897 GHz; 5.15 to 5.35 GHz (FCC UNII 1 and UNII 2); 5.725 to 5.85 GHz (FCC UNII 3); 5.15 to 5.35 GHz (ETSI); 5.470 to 5.725 (ETSI); 5.15 to 5.25 GHz (Japan)	
Range (With 2.2 dBi dipole antenna for 802.11g and 802.11b and 6 dBi gain patch for 802.11a)	802.11a—Indoor: 45 ft (13 m) @ 54 Mbps, 110 ft (33 m) @ 18 Mbps, 165 ft (50 m) @ 6 Mbps; Outdoor: 100 ft (30 m) @ 54 Mbps, 600 ft (183 m) @ 18 Mbps, 1000 ft (304 m) @ 6 Mbps 802.11b/g—Indoor: 90 ft (27 m) @ 54 Mbps, 180 ft (54m) @ 18 Mbps, 160 ft (48 m) @ 11 Mbps, 300 ft (91 m) @ 6 Mbps, @ 410 ft (124 m) · Outdoor: 250 ft (76 m) @ 54 Mbps, 600 ft (183 m) @ 18 Mbps, 1000 ft (304 m) @ 11 Mbps, 1300 ft (396 m) @ 6 Mbps, 2000 ft (610 m) @ 1 Mbps	
Antenna	Integrated diversity dual-band 2.4/5 GHz antenna	
Security Architecture Client Authentication (Cisco Wireless Security Suite)	Authentication: WPA and 802.1X support for Cisco LEAP, PEAP-GTC, PEAP-MSCHAPv2, and EAP-TLS; MAC address and by standard 802.11 authentication mechanisms Encryption: Support for static and dynamic IEEE 802.11 WEP keys of 40 bits and 128 bits; Cisco TKIP and WPA TKIP encryption enhancements: key hashing (per-packet keying), message integrity check (MIC) and broadcast key rotation	
Drivers	Windows XP and Windows 2000	
Dimensions (H x W x D)	0.19 x 2.05 x 4.46 in. (4.80 x 52.08 x 113.35 mm.)	3.12205 x 4.72 in. (79.3 x 119.9 mm.)
Weight	1.6 oz (44.0g)	Standard (frame) PCI w/Antenna: 3.64 oz. (103.2 g), Standard (frame) PCI w/o Antenna: 1.92 oz. (54.7 g), Low Profile PCI w/Antenna: 3.43 oz. (97.5 g), Low Profile PCI w/o Antenna: 1.72 oz. (49.0 g)
Warranty	One Year	One Year

Selected Part Numbers and Ordering Information

Cisco Aironet Wireless LAN Client Adapters

AIR-CB21AG-A-K9	802.11a/b/g Cardbus Adapter; FCC Cnfg
AIR-CB21AG-P-K9	802.11a/b/g Cardbus Adapter; Japan2 Cnfg
AIR-CB21AG-A-K9-40	802.11a/b/g Cardbus Adapter; FCC Cnfg; 40PK
AIR-CB21AG-E-K9	802.11a/b/g Cardbus Adapter; ETSI Cnfg
AIR-CB21AG-J-K9	802.11a/b/g Cardbus Adapter; TELEC Cnfg
AIR-CB21AG-W-K9	802.11a/b/g Cardbus Adapter; Rest of World Cnfg
AIR-PI21AG-A-K9	802.11a/b/g Low Profile PCI Adapter; FCC Cnfg
AIR-PI21AG-A-K9-10	802.11a/b/g Low Profile PCI Adapter; FCC Cnfg; 10PK
AIR-PI21AG-E-K9	802.11a/b/g Low Profile PCI Adapter; ETSI Cnfg
AIR-PI21AG-J-K9	802.11a/b/g Low Profile PCI Adapter; TELEC Cnfg
AIR-PI21AG-W-K9	802.11a/b/g Low Profile PCI Adapter; Rest of World Cnfg

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For More Information

See the Cisco Wireless Web site: <http://www.cisco.com/go/wireless>

Cisco Aironet 1400 Series Wireless Bridge

The Cisco Aironet 1400 Series Wireless Bridge creates a benchmark for wireless bridging by providing a high-performance and feature-rich solution for connecting multiple LANs in a metro area. It delivers deployment personnel a flexible, easy to use solution while also meeting security requirements of wide area networking professionals.



When to Sell

Sell This Product

Cisco Aironet 1400 Series
Wireless Bridge

When a Customer Needs These Features

- A cost-effective, high-bandwidth way to connect networks in multiple locations within a metro area
- A rapid payback period and a lower total cost of ownership than a leased line
- High performance data rates of 54 Mbps at point-to-point ranges of 7.5 miles and 2 miles for point-to-multipoint ranges

Key Features

- Support for both point-to-point or point-to-multipoint configurations
- Industry leading range and throughput, supporting data rates up to 54 Mbps
- Enhanced security mechanisms based on 802.11 standards
- Ruggedized enclosure optimized for harsh outdoor environments with extended operating temperature range
- Integrated or optional external antennas for flexibility in deployment
- Designed specifically for ease-of-installation and operation

Competitive Products

- 3Com wireless outdoor bridges
- D-Link bridges

Specifications

Feature	AIR-BR1410A-A-K9	AIR-BR1410A-A-K9-N	Power Injector LR
Frequency band	5.725 to 5.825 GHz (FCC UNII 3)	Same as AIR-BR1410A-A-K9	
Wireless modulation	Coded Orthogonal Frequency Division Multiplexing (COFDM)	Same as AIR-BR1410A-A-K9	
Media access protocol	Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA)	Same as AIR-BR1410A-A-K9	
Modulation	BPSK @ 6 and 9 Mbps, QPSK @ 12 and 18 Mbps, 16-QAM @ 24 and 36 Mbps, 64-QAM @ 48 and 54 Mbps	Same as AIR-BR1410A-A-K9	
Non-overlapping channels	4	Same as AIR-BR1410A-A-K9	
Receive sensitivity (10% PER with 3200byte packets)	6 Mbps: -83 dBm, 9 Mbps: -83 dBm, 12 Mbps: -81 dBm, 18 Mbps: -80 dBm, 24 Mbps: -77 dBm, 36 Mbps: -74 dBm, 48 Mbps: -70 dBm, 54 Mbps: -68 dBm	Same as AIR-BR1410A-A-K9	
Maximum Operational Receive Level	-19 dBm	Same as AIR-BR1410A-A-K9	
Maximum Survivable Receive Level	0 dBm	Same as AIR-BR1410A-A-K9	
Available transmit power settings	250 mW (24 dBm), 200 mW (23 dBm), 155 mW (22 dBm), 125 mW (21 dBm), 60 mW (18 dBm), 30 mW (15 dBm), 15 mW (12 dBm) Maximum power setting will vary according to individual country regulations	Same as AIR-BR1410A-A-K9	
Point-to-point range ¹	7.5 miles (13 km) @ 54 Mbps, 16 miles (26 km) @ 9 Mbps	12 miles (19 km) @ 54 Mbps, 23 miles (37 km) @ 9 Mbps, (Antennas are 28 dBi dish)	
Point-to-multipoint range (sector antenna at root) ²	2 miles (3 km) @ 54 Mbps, 8 miles (13 km) @ 9 Mbps	4 miles (7 km) @ 54 Mbps, 11 miles (18 km) @ 9 Mbps, (Non-root antenna is 28 dBi dish)	
Antenna	Captured Linear Polarization: 22.5dBi gain: 10 E-plane by 12 H-plane beamwidth	One N-Type connector for professional installations (antennas sold separately)	

Feature	AIR-BR1410A-A-K9	AIR-BR1410A-A-K9-N	Power Injector LR
Security	Cisco Wireless Security Suite, including: Authentication: 802.1x support including LEAP to yield mutual authentication and dynamic per-user, per-session encryption keys Encryption: Support for static and dynamic IEEE 802.11 WEP keys of 40 bits and 128 bits Pre-standard TKIP WEP enhancements: key hashing (per packet keying) and Message Integrity Check (MIC)	Same as AIR-BR1410A-A-K9	
SNMP compliance	v1 and v2	Same as AIR-BR1410A-A-K9	
Status LEDs	Four LEDs: Install, Radio, Status, Ethernet	Same as AIR-BR1410A-A-K9	Four LEDs: Power ON, Injector status, LAN Ethernet status, Bridge Ethernet status
RSSI port	BNC connector DC Voltage port (0VDC to 2.7 VDC)	BNC connector DC Voltage port (0VDC to 2.7 VDC)	NA
Uplink	100 Mbps over dual coaxial cables	100 Mbps over dual coaxial cables	10/100BaseT Ethernet
Configuration support	Telnet, HTTP, FTP, TFTP, SNMP	Telnet, HTTP, FTP, TFTP, SNMP	NA
Compliance	Customers are responsible for verifying approval for use in their country. Please see http://www.cisco.com/go/aironet/compliance to verify approval and to identify the regulatory domain that corresponds to a particular country. All regulatory domains may not have been approved. As they are approved, the part numbers will be available on the Global Price List. Individual country regulations)		
Dimensions (H x W x D)	11.4 x 11.4 x 4.2 in. (29 x 29 x 11 cm)	11.6 x 11.6 x 3.6 in. (29 x 29 x 9 cm)	6.7 x 6.3 x 1.3 in (17 x 16 x 3 cm)
Weight	11 lbs. (5 kg)	10 lbs. (5 kg)	1.4lbs. (0.6kg)
Operational temperature	-30 to +55°C (-22 to +131°F)	Same as AIR-BR1410A-A-K9	0 to +50C (32 to 122F)
Storage temperature	-40 to +85°C (-40 to +185°F)	Same as AIR-BR1410A-A-K9	-40 to +70C (-40 to +158F)
Operational altitude	4206 m (13,800 ft.)	Same as AIR-BR1410A-A-K9	Same as AIR-BR1410A-A-K9
Storage altitude	4877 m (16,000 ft.)	Same as AIR-BR1410A-A-K9	Same as AIR-BR1410A-A-K9
Humidity	0 to 100% (condensing)	Same as AIR-BR1410A-A-K9	0 to 90% (non-condensing)
Vibration	0.001 G2/Hz from 5 - 100 Hz	Same as AIR-BR1410A-A-K9	Same as AIR-BR1410A-A-K9
Storage vibration	0.01 G2/Hz from 5 - 100 Hz	Same as AIR-BR1410A-A-K9	Same as AIR-BR1410A-A-K9
Enclosure	Aluminum with environmentally sealed plastic radome	NEMA-4, aluminum	Metal case
AC power	Not Required as uses DC voltage from Power Injector	Same as AIR-BR1410A-A-K9	100 to 240 VAC, +/- 10% (power supply)
DC power	48 VDC +/-2V	Same as AIR-BR1410A-A-K9	Same as AIR-BR1410A-A-K9
Warranty	One year	Same as AIR-BR1410A-A-K9	Same as AIR-BR1410A-A-K9

Selected Part Numbers and Ordering Information

Cisco Aironet 1410 Wireless Bridge

AIR-BR1410A-A-K9	Aironet 1410 Wireless Bridge with 22.5 dBi Antenna, FCC Cnfg
AIR-BR1410A-E-K9	Aironet 1410 Integrated Metro Bridge, European Config
AIR-BR1410A-K-K9	Aironet 1410 Integrated Metro Bridge, Korean Config
AIR-BR1410A-Z-K9	Aironet 1410 Integrated Metro Bridge, Pacific Config
AIR-BR1410A-A-K9-N	Aironet 1410 Wireless Bridge w/ N-Type Connector, FCC Cnfg

1. This is only a small subset of all parts available via URL listed under "For More Information." Some parts have restricted access or are not available through distribution channels. Resellers: For latest part number and pricing info, see the Distribution Product Reference Guide at: <http://www.cisco.com/dprg> (limited country availability)

For More Information

See the Cisco Wireless Web site: <http://www.cisco.com/go/wireless>

Cisco Antennas and Accessories

Every wireless LAN deployment is different. When engineering an in-building solution, varying facility sizes, construction materials, and interior divisions raise transmission and multipath considerations. Cisco has the widest range of antennas, cable, and accessories available from any wireless manufacturer. Cisco offers a complete range of 2.4 GHz and 5 GHz antennas for access point and bridge equipment that enable a customized wireless solution for almost any installation



Key Features

- **Client Adapter Antennas**—To extend the transmission range for more specialized applications, a variety of optional, higher-gain antennas are provided that are compatible with selected client adapters
- **Access Point Antennas**—Compatible with all Cisco RP-TNC-equipped access points; Available with different gain and range capabilities, beam widths, and form factors
- **Bridge Antennas**—Available in directional configurations for point-to-point transmission and omnidirectional configuration for point-to-multipoint implementations
- **Low-loss cable** extends the length between any Cisco Aironet bridge and the antenna. With a loss of 6.7 dB per 100 feet (30m), low-loss cable provides installation flexibility without a significant sacrifice in range
- Complete range of antennas for 5 GHz bridging applications

Specifications

Cisco Aironet 2.4 GHz Access Point Antennas with RP-TNC Connectors

Feature	AIR-ANT5959	AIR-ANT2410Y-R	AIR-ANT2012	AIR-ANT3213
<i>Description</i>	2-dBi Diversity omnidirectional ceiling mount	10-dBi Yagi mast or wall mount	Diversity patch wall mount	5.2-dBi Pillar mount diversity omni
<i>Application</i>	Indoor unobtrusive antenna, best for ceiling mount. Excellent throughput and coverage solution in high multipath cells and dense user population	Indoor/Outdoor directional antenna for use with Access Points or Bridges	Indoor/Outdoor, unobtrusive medium range antenna	Indoor, unobtrusive medium-range antenna
<i>Approximate Indoor Range¹</i>	6 Mbps: 295 ft (90 m) 54 Mbps: 88 ft (27 m)	6 Mbps: 548 ft (167 m) 54 Mbps: 165 ft (50 m)	6 Mbps: 418 ft (127 m) 54 Mbps: 126 ft (38 m)	6 Mbps: 379 ft (121 m) 54 Mbps: 114 ft (35 m)
<i>Cable Length</i>	3 ft. (0.91m)	3 ft. (0.91 m)	3 ft. (0.91m)	3 ft. (0.91m)
<i>Dimensions (H x W x D)</i>	5.3 x 2.8 x 0.9 in. (13.5 x 7.1 x 2.3 cm)	7.25 x 3 in. (18.4 x 7.62 cm)	4.78 x 6.66 x 0.82 in. (12.14 x 16.92 x 2.08 cm)	14 x 5 in. x 1 in. (35.5 x 12.7 x 2.5 cm)
<i>Weight</i>	7 oz. (.19 kg)	8 oz.	9.6 oz. (272g)	1 lb. (460g)
Feature	AIR-ANT1728	AIR-ANT4941	AIR-ANT2422DG-R	AIR-ANT2422DW-R
<i>Description</i>	5.2-dBi omnidirectional ceiling mount	2.2-dBi black dipole antenna	2.2-dBi gray non-articulating dipole antenna	2.2-dBi white dipole antenna
<i>Application</i>	Indoor medium-range antenna, typically hung from crossbars of drop ceilings	Indoor omnidirectional coverage	Indoor omnidirectional coverage	Indoor omnidirectional coverage
<i>Approximate Indoor Range¹</i>	6 Mbps: 379 ft (116 m) 54 Mbps: 114 ft (35 m)	6 Mbps: 300 ft (91 m) 54 Mbps: 90 ft (27 m)	6 Mbps: 300 ft (91 m) 54 Mbps: 90 ft (27 m)	6 Mbps: 300 ft (91 m) 54 Mbps: 90 ft (27 m)
<i>Cable Length</i>	3 ft. (0.91m)	N/A	N/A	N/A
<i>Dimensions (H x W x D)</i>	11.25 x 1 in. (28.5 x 2.5 cm)	5.5 in. (14 cm)	5.5 in. (14 cm)	5.5 in. (14 cm)
<i>Weight</i>	4.6 oz. (131g)	1.1 oz. (31 g)	1.1 oz. (31 g)	1.1 oz. (31 g)
Feature	AIR-ANT1729	AIR-ANT2485P-R	AIR-ANT2460P-R	AIR-ANT2465P-R
<i>Description</i>	6-dBi Patch wall mount	8.5-dBi patch wall mount	6-dBi patch wall mount	6.5-dBi diversity patch wall mount
<i>Application</i>	Indoor/outdoor, unobtrusive, midrange antenna (may also be used as a medium-range bridge antenna)	Indoor, unobtrusive, long-range antenna (may also be used as a midrange bridge antenna)	Indoor, unobtrusive, long-range antenna (may also be used as a midrange bridge antenna)	Indoor/outdoor, unobtrusive midrange antenna

Cisco Aironet 2.4 GHz Access Point Antennas with RP-TNC Connectors (con.)

Approximate Indoor Range¹	6 Mbps: 403 ft (123 m) 54 Mbps: 121 ft (37 m)	507 ft (155 m) 153 ft (47 m)	403 ft (123 m) 121 ft (37 m)	418 ft (127 m) 126 ft (38 m)
Cable Length	3 ft. (0.91m)	3 ft (0.91 m)	3 ft (0.91 m)	3 ft (0.91 m)
Dimensions (H x W x D)	4 x 5 in. (9.7 x 13 cm.)	5.3 x 5.3 x .90 in. (13.5 x 13.5 x 2.28 cm.)	4.1 x 3.9 x .75 in. (10.4 x 9.9 x 1.9 cm.)	5 x 6.7 x 0.90 in. (12.7 x 17 x 2.28 cm.)
Weight	4.9 oz. (139 g.)	8.2 oz. (231.3 g.)	6 oz. (171.5 g.)	11.6 oz. (330.2 g.)

1. All range estimations are based on an integrated client adapter antenna associating with an access point under ideal indoor conditions. The distances referenced here are approximations and should be used for estimation only.

Cisco Aironet 5 GHz Access Point Antennas with RP-TNC Connectors

Feature	AIR-ANT5145V-R	AIR-ANT5160V-R	AIR-ANT5170P-R	AIR-ANT5195P-R
Description	4.5-dBi diversity omnidirectional ceiling mount antenna	6-dBi omnidirectional antenna	7.0-dBi Diversity patch wall mount	9.5-dBi Patch wall or articulating mast mount
Application	Indoor midrange antenna	Indoor/outdoor midrange antenna	Indoor/outdoor directional wall mount antenna	Indoor/outdoor patch antenna provides different mounting options
Approximate Range^[3]	6 Mbps: 732 ft (223 m) 54 Mbps: 82 ft (25 m)	6 Mbps: 822 ft (251 mm.) 54 Mbps: 92 ft (28 m)	6 Mbps: 880 ft (270 m) 54 Mbps: 140 ft (43 m)	6 Mbps: 1030 ft (313 m) 54 Mbps: 170 ft (52 m)
Beam Width	360° H 50° E	360° H 17° E	70° H, 50° V	50° H, 43° V
Cable Length	3 ft. (0.91 m.)	3 ft. (0.91 m)	3 ft. (0.91 m)	3 ft. (0.91 m)
Dimensions (L x D)	6.75 x 4.1 in. (17.1 x 10.41 cm)	12 x 1 in. (30.5 x 2.5 cm)	5.7 in. (14.5 cm.) x 4.3 in. (10.9 cm.) x 0.7 in. (1.8 cm.)	5.1 in. (12.9 cm.) x 5.1 in. (12.9 cm.) x 1.0 in. (2.5 cm.)
Weight	11.5 oz.	5.3 oz.	8 oz (0.2 kg.)	9 oz. (0.25 kg.)

Cisco Aironet 5 GHz Access Point Antennas with RP-TNC Connectors

Feature	AIR-ANT5135D-R	AIR-ANT5135DG-R	AIR-ANT5135DW-R
Description	3.5-dBi black dipole antenna Indoor omnidirectional coverage	3.5-dBi gray non-articulating antenna Indoor omnidirectional coverage	3.5-dBi white dipole antenna Indoor omnidirectional coverage
Application	675 ft (206 m)	675 ft (206 m)	675 ft (206 m)
Approximate Range^[3]	75 ft (21 m) 360°H, 40°E	75 ft (21 m) 360°H, 40°E	75 ft (21 m) 360°H, 40°E
Beam Width	N/A	N/A	N/A
Cable Length	5.3 x 0.6 in. (13.5 x 1.5 cm)	5.3 x 0.6 in. (13.5 x 1.5 cm)	5.3 x 0.6 in. (13.5 x 1.5 cm)
Dimensions (L x D)	1 oz (28.3 g)	1 oz (28.3 g)	1 oz (28.3 g)

Cisco Aironet 2.4 GHz and 4.9-5 GHz Access Point and Bridge Antennas with N-Type Connectors

Feature	AIR-ANT5175V-N	AIR-ANT2455V-N
Description	7.5-dBi omnidirectional	5.5-dBi omnidirectional
Application	Outdoor	Outdoor, direct mount on unit
Beam Width	16°V	25°V
Cable Length	1 ft (0.30 m)	N/A
Dimensions	11.65 in (29.41 cm) x 1 in (2.54 cm)	12.5 in (31.75 cm) x 1 in (2.54 cm)
Weight	6 oz (17 kg)	5 oz (14 kg)

Cisco Aironet 2.4 GHz Bridge Antennas

Feature	AIR-ANT2506	AIR-ANT24120	AIR-ANT2414S-R	AIR-ANT1949	AIR-ANT3338
Description	5.2 dBi Omnidirectional	12 dBi High-gain omnidirectional	14 dBi Vertically polarized sector	13.5 Yagi mast mount	21 dBi Solid dish
Application	Mast mount	Mast mount	Outdoor long range point-to-multipoint applications	Outdoor medium-range directional connections	Outdoor long-range directional connections
Approximate Indoor Range^[4]	2 Mbps: 3.3 miles (5.31 km) 11 Mbps: 1.66 miles (2.66 km) 54 Mbps: 21 miles (.34 km)	2 Mbps: 15.81 miles (25.43 km) 11 Mbps: 7.92 miles (12.75 km) 54 Mbps: 1.0 miles (1.6 km)	2 Mbps: 16.71 miles (26.89 km) 11 Mbps: 8.89 miles (14.30 km) 54 Mbps: 1.26 miles (2.02 km)	2 Mbps: 18.33 miles (29.49 km) 11 Mbps: 11.19 miles (18.01 km) 54 Mbps: 1.41 miles (2.27 km)	2 Mbps: 26.49 miles (42.62 km) 11 Mbps: 20.1 miles (32.33 km) 54 Mbps: 4.46 miles (7.17 km)
Cable Length	3 ft. (0.91m)	1 ft. (0.30m)	5 ft (1.5 m)	3 ft. (0.91m)	2 ft. (0.61m)

Cisco Aironet 2.4 GHz Bridge Antennas

<i>Dimensions (L x D)</i>	13 x 1 in. (33 x 2.5 cm)	50 x 1.5 in. (127 x 3 cm)	36 x 6 x 1.25 in. (91 x 15 x 10 cm)	18 x 3 in. (46 x 7.6 cm)	24 in. d (61 cm)
<i>Weight</i>	5 oz. (14 g)	1.5 lb. (0.68 kg)	6.5 lb. (3 kg)	12 oz. (34 kg)	11 lb. (5 kg)

Cisco Aironet Accessories

<i>Feature</i>	<i>AIR-ACC2537-060</i>	<i>AIR-ACC245LA-R</i>	<i>AIR-ACC2662</i>
<i>Description</i>	60 in. (152 cm) bulkhead extender	Yagi articulating mount	Yagi articulating mount
<i>Application</i>	Flexible antenna cable that extends access point cabling typically within an enclosure	Helps prevent damage due to lightning-induced surges or static electricity; Helps prevent damage due to lightning-induced surges or static electricity	Adds swiveling capability to mast-mounted Yagi antennas

Cisco Aironet 5.8 GHz Bridge Antennas with N-Type Connectors

<i>Feature</i>	<i>AIR-ANT58G9VOA-N</i>	<i>AIR-ANT58G10SSA-N</i>	<i>AIR-ANT58G28SDA-N</i>
<i>Description</i>	9.0-dBi omnidirectional Mast mount	9.5-dBi sector antenna Mast mount	28.0-dBi dish antenna Mast mount
<i>Application</i>	Outdoor short-range point-to-multipoint applications	Outdoor medium-range point-to-point and point-to-multipoint applications	Outdoor long-range directional connections
<i>Polarization</i>	Vertical	Vertical or horizontal Field configurable	Vertical or horizontal Field configurable
<i>Elevation adjustment</i>	None	None	+/- 12.5 degrees
<i>Approximate range at 9 Mbps</i>	8 miles (13 km) (with 22.5 dBi captive antenna on the remote site)	Same as AIR-ANT58G9VOA-N	23 miles (37 km) (with 28 dBi antennas on each end)
<i>Approximate range at 54 Mbps</i>	2 miles (3 km) (with 22.5 dBi captive antenna on the remote site)	Same as AIR-ANT58G9VOA-N	12 miles (19 km) (with 28 dBi antennas on each end)
<i>Beam width</i>	360 H, 6 V	60 H, 60 V	4.75 H, 4.75 V
<i>Supplied jumper cable length</i>	4.9 ft. (1.5 m)	4.9 ft. (1.5 m)	4.9 ft. (1.5 m)
<i>Dimensions (H x W x D)</i>	20.25 x .64 in. (51.4 x 1.62 cm) (L x W)	2.5 x 2.5 x 1.75 in. (6.4 x 6.4 x 4.5 cm)	Diameter: 29 in. (74 cm) Depth: 14.5 in. (36.8 cm)
<i>Weight</i>	2.0 lb. (0.9 kg)	1.25 lb. (0.6 kg)	9.5 lb. (4.3 kg)

Cisco Aironet Bridge Accessory

<i>Feature</i>	<i>AIR-ACCRWM1400</i>	<i>AIR-ACCBRGB=</i>	<i>AIR-ACCMFM1400=</i>
<i>Description</i>	Roof/Wall mount kit	Grounding block	Multifunction mount
<i>Application</i>	Allows mounting to flat surfaces. Includes full elevation and azimuth adjustment	Helps prevent damage due to lightning-induced surges or static electricity	Allows mounting to poles with a diameter between 1.5 in. and 2.5 in. Includes both elevation and polarization adjustment

Cisco Aironet Power Injector Cables

<i>Feature</i>	<i>AIR-CAB020DRG6-F=</i>	<i>AIR-CAB050DRG6-F=</i>	<i>AIR-CAB100DRG6-F</i>
<i>Cable length</i>	20 ft. (6m)	50 ft. (15m)	100 ft. (30m)

Selected Part Numbers and Ordering Information¹**Cisco Aironet Accessories**

AIR-ACC2662	Yagi Antenna Articulating Mount
AIR-ACC2537-060	60 in. (152 cm) bulkhead extender
AIR-ACC2545LA-R	2.4 GHz and 5 GHz lightning arrester
AIR-CAB020LL-R	20 ft. (6m) low-loss antenna cable
AIR-CAB050LL-R	50 ft. (15m) low loss antenna cable
AIR-CAB100ULL-R	100 ft. (30m) low loss antenna cable
AIR-CAB150ULL-R	150 ft. (46m) low loss antenna cable

Chapter 3

Cisco Aironet Antennas

AIR-ANT1728	5.2 dBi Omni Ceiling Mount Antenna
AIR-ANT1729	6 dBi Patch Wall Mount Antenna
AIR-ANT1949	13.5 dBi Yagi Mast Mount Antenna
AIR-ANT2012	6.5 dBi Diversity Patch Wall Mount Antenna
AIR-ANT2506	5.2 dBi Omnidirectional Mast Mount Antenna
AIR-ANT3213	5.2 dBi Pillar-Mount Diversity Omni Antenna
AIR-ANT2410Y-R	10 dBi Yagi mast or wall mount
AIR-ANT3338	21 dBi Solid Dish Antenna
AIR-ANT24120	12 dBi Omnidirectional Mast Mount Antenna
AIR-ANT4941	2.2 dBi Dipole Antenna (Standard Rubber Duck)
AIR-ANT5959	2.0dBi Diversity Omni Ceiling Mount Antenna
AIR-ANT2414S-R	14dBi Sector Mast Mount Antenna
AIR-ANT5145V-R	4.5 dBi omni
AIR-ANT5160V-R	6 dBi omni
AIR-ANT5170P-R	7.0 dBi Diversity patch wall mount
AIR-ANT5195P-R	9.5 dBi Patch wall or articulating mast mount
AIR-ANT2422DG-R	2.2 dBi Gray non-articulating dipole
AIR-ANT2422DW-R	2.2 dBi White dipole
AIR-ANT2485P-R	8.5 dBi Patch wall mount
AIR-ANT2460P-R	6 dBi Patch wall mount
AIR-ANT2465P-R	6.5 dBi Diversity patch wall mount
AIR-ANT5135DG-R	3.5 dBi Gray non-articulating dipole
AIR-ANT5135DW-R	3.5 dBi White dipole
AIR-ANT5175V-N	7.5 dBi Omnidirectional
AIR-ANT2455V-N	5.5 dBi Omnidirectional
AIR-ANT58G9V0A-N	9.0 dBi Omnidirectional mast mount
AIR-ANT58G10SSA-N	9.5 dBi Sector antenna, mast mount
AIR-ANT58G28SDA-N	28.0 dBi Dish antenna, mast mount

Low-Loss/Ultra Low-Loss Antenna Cables

AIR-CAB005LL-R ²	5-ft low loss cable, one RP-TNC plug, one RP-TNC jack
AIR-CAB020LL-R ²	20-ft low loss cable, one RP-TNC plug, one RP-TNC jack
AIR-CAB050LL-R ²	50-ft low loss cable, one RP-TNC plug, one RP-TNC jack
AIR-CAB100ULL-R ²	100-ft ultra low loss cable, one RP-TNC plug, one RP-TNC jack
AIR-CAB150ULL-R ²	150-ft ultra low loss cable, one RP-TNC plug, one RP-TNC jack
AIR-ACC2537-060 ³	5-ft (60 inches) RG-58 type cable with one RP-TNC plug and one RP-TNC jack

1. This is only a small subset of all parts available via URL listed under "For More Information." Some parts have restricted access or are not available through distribution channels. Resellers: For latest part number and pricing info, see the **Distribution Product Reference Guide** at: <http://www.cisco.com/dprg> (limited country availability).
2. Type of Cable: Interconnect
3. Type of Cable: Bulkhead Extender

For More Information

See the Aironet Antennas & Accessories Web site <http://www.cisco.com/go/antenna>

Cisco 2100 Series Wireless LAN Controller



Cisco Wireless LAN Controllers are responsible for system wide wireless LAN functions, such as security policies, intrusion prevention, RF management, QoS, and mobility. They work in conjunction with Cisco Lightweight Access Points and the WCS to support business-critical wireless applications. From voice and data services to location tracking, Cisco Wireless LAN Controllers provide the control, scalability, security, and reliability that network managers need to build secure, enterprise-scale wireless networks—from branch offices to main campuses. The Cisco 2100 Series Wireless LAN Controller supports up to six lightweight access points making it ideal for small— to medium—sized enterprise facilities such as branch offices.

When to Sell

Sell This Product When a Customer Needs These Features

- Cisco 2100 Series Wireless LAN Controller*
- An enterprise scalable architecture that provides business-critical wireless services for small and medium businesses
 - Create an intelligent RF control plane for self-configuration, self-healing, and self-optimization
 - Require a system that is deployed without modifying existing routing and switching infrastructures without touching access points

Key Features

- A cost-effective solution for enterprise branch deployments and small and medium-sized business environments
- Business-class RF security and WLAN security policy monitoring
- Simplified network deployment, operations, and management to help reduce overall operational expenses

Competitive Products

- Alcatel OmniAccess Switches
- Nortel Wireless Switches
- Aruba Mobility Controllers
- Trapeze Mobility Exchange WLAN Controllers

Specifications

Features	Cisco 2100 Series Wireless LAN Controller
Wireless	IEEE 802.11a, 802.11b, 802.11g, 802.11d, 802.11h
Wired/Switching	IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX specification, and IEEE 802.1Q VLAN tagging
Data RFCs	RFC 768 UDP, RFC 791 IP, RFC 792 ICMP, RFC 793 TCP, RFC 826 ARP, RFC 1122 Requirements for Internet Hosts, RFC 1519 CIDR, RFC 1542 BOOTP, RFC 2131 DHCP
Security Standards	Wi-Fi Protected Access (WPA), IEEE 802.11i (WPA2, RSN), RFC 1321 MD5 Message-Digest Algorithm, RFC 2104 HMAC: Keyed Hashing for Message Authentication, RFC 2246 TLS Protocol Version 1.0, RFC 3280 X.509 PKI Certificate and CRL Profile
Encryption	*WEP and TKIP-MIC: RC4 40, 104 and 128 bits (both static and shared keys), Secure Sockets Layer (SSL) and TLS: RC4 128-bit and RSA 1024- and 2048-bit, AES: CCM, CCMP
AAA	IEEE 802.1X, RFC 2548 Microsoft Vendor-Specific RADIUS Attributes, RFC 2716 PPP EAP-TLS, RFC 2865 RADIUS Authentication, RFC 2866 RADIUS Accounting, RFC 2867 RADIUS Tunnel Accounting, RFC 2869 RADIUS Extensions, RFC 3576 Dynamic Authorization Extensions to RADIUS, RFC 3579 RADIUS Support for EAP, RFC 3580 IEEE 802.1X RADIUS Guidelines, RFC 3748 Extensible Authentication Protocol, Web-based authentication
Management	SNMP v1, v2c, v3, RFC 854 Telnet, RFC 1155 Management Information for TCP/IP-Based Internets, RFC 1156 MIB, RFC 1157 SNMP, RFC 1213 SNMP MIB II, RFC 1350 TFTP, RFC 1643 Ethernet MIB, RFC 2030 SNMP, RFC 2616 HTTP, RFC 2665 Ethernet-Like Interface types MIB, RFC 2674 Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering, and Virtual LAN Extensions, RFC 2819 RMON MIB, RFC 2863 Interfaces Group MIB, RFC 3164 Syslog, RFC 3414 User-Based Security Model (USM) for SNMPv3, RFC 3418 MIB for SNMP, RFC 3636 Definitions of Managed Objects for IEEE 802.3 MAUs, Cisco private MIBs
Management Interfaces	Designed for use with Cisco Wireless Control System, Web-based: HTTP/HTTPS individual device manager, Command-line interface: Telnet, SSH, serial port
Interfaces and Indicators	Console port: RS-232 (DB-9 male/RJ-45 connector included); Network: Eight 10/100 Mbps Ethernet (RJ-45) including two 802.3af PoE ports rated for use with Cisco Aironet lightweight access points; LED indicators: Link Activity (each 10/100 port), Power, Status, Alarm, Access Point Joined
Regulatory Compliance	CE Mark, Safety: UL 60950-1:2003, EN 60950:2000, EMI and susceptibility (Class B): U.S.: FCC Part 15.107 and 15.109, Canada: ICES-003; Japan: VCCI, Europe: EN 55022, EN 55024
Temperature	Temperature: Operating: 32 to 104°F (0 to 40°C), Storage: -13 to 158°F (-25 to 70°C), Humidity: Operating humidity: 10 to 95 percent, noncondensing, Storage humidity: Up to 95 percent, Heat Dissipation: 92 BTU/hour
Dimensions (W x D x H)	1.75 x 7.89 x 6.87 in. (4.45 x 20.04 x 17.45 cm)
Weight	4.0 lb (1.81 kg) with power supply
Power	Input power: 100 to 240 VAC; 50/60 Hz

Selected Part Numbers and Ordering Information

Cisco 2106 Series Wireless LAN Controller
 AIR-WLC2106-K9 Cisco 2106 Series Wireless LAN Controller for up to six Cisco Aironet

For More Information

See the Cisco Wireless Web site: <http://www.cisco.com/go/wireless>

Cisco 4400 Series Wireless LAN Controller



The Cisco 4400 Series Wireless LAN Controller provides system wide wireless LAN functions for medium to large-sized facilities. By automating WLAN configuration and management functions, network managers have the control, security, redundancy, and reliability needed to cost-effectively scale and manage their wireless networks as easily as they scale and manage their traditional wired networks. The Cisco 4400 Series Wireless LAN Controller works in conjunction with Cisco Aironet lightweight access points, the Cisco Wireless Control System (WCS), and the Cisco Wireless Location Appliance to support business-critical wireless data, voice, and video applications. It provides real-time communication between lightweight access points and other wireless LAN controllers to deliver centralized security policies, wireless intrusion prevention system (IPS) capabilities, award-winning RF management, QoS, and mobility.

When to Sell

Sell This Product When a Customer Needs These Features

- Cisco 4400 Series Wireless LAN Controller*
- Enterprise Scalability—Scalable architecture provides business-critical wireless services for locations of all sizes
 - Integrated Radio Resource Management (RRM)—Create an intelligent RF control plane for self-configuration, self-healing, and self-optimization
 - Enterprise Reliability—Automated recovery from lightweight access point and Wireless LAN controller failures maximizes the availability of the wireless network

Key Features

- Component of Cisco lightweight access point solution
- Enterprise scalability
- Zero-configuration deployment
- Multi-layered security
- Rogue access point detection, location, and containment
- Mobility management

Competitive Products

- Alcatel OmniAccess Switches
- Aruba Mobility Controllers
- Nortel Wireless Switches
- Trapeze Mobility Exchange WLAN Controllers

Specifications

<i>Features</i>	<i>Cisco 4400 Series Wireless LAN Controller</i>
Wireless	IEEE 802.11a, 802.11b, 802.11g, 802.11d, 802.11h
Data RFCs	RFC 768 UDP, RFC 791 IP, RFC 792 ICMP, RFC 793 TCP, RFC 826 ARP, RFC 1122 Requirements for Internet Hosts, RFC 1519 CIDR, RFC 1542 BOOTP, RFC 2131 DHCP
Security Standards	Wi-Fi Protected Access (WPA); IEEE 802.11i (WPA2, RSN); RFC 1321 MD5 Message-Digest Algorithm; RFC 2104 HMAC; Keyed Hashing for Message Authentication; RFC 2246 TLS Protocol Version 1.0; RFC 3280 X.509 PKI Certificate and CRL Profile
Encryption	WEP and TKIP-MIC: RC4 40, 104 and 128 bits (both static and shared keys); Secure Sockets Layer (SSL) and TLS: RC4 128-bit and RSA 1024- and 2048-bit; AES: CCM, CCMP
AAA	IEEE 802.1X; RFC 2548 Microsoft Vendor-Specific RADIUS Attributes; RFC 2716 PPP EAP-TLS; RFC 2865 RADIUS Authentication; RFC 2866 RADIUS Accounting; RFC 2867 RADIUS Tunnel Accounting; RFC 2869 RADIUS Extensions; RFC 3576 Dynamic Authorization Extensions to RADIUS; RFC 3579 RADIUS Support for EAP; RFC 3580 IEEE 802.1X RADIUS Guidelines; RFC 3748 Extensible Authentication Protocol; Web-based authentication

<i>Features Cisco 4400 Series Wireless LAN Controller</i>	
Management	SNMP v1, v2c, v3; RFC 854 Telnet; RFC 1155 Management Information for TCP/IP-Based Internets; RFC 1156 MIB; RFC 1157 SNMP; RFC 1213 SNMP MIB II; RFC 1350 TFTP; RFC 1643 Ethernet MIB; RFC 2030 SNMP; RFC 2616 HTTP; RFC 2665 Ethernet-Like Interface types MIB; RFC 2674 Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering, and Virtual LAN Extensions; RFC 2819 RMON MIB; RFC 2863 Interfaces Group MIB; RFC 3164 Syslog; RFC 3414 User-Based Security Model (USM) for SNMPv3; RFC 3418 MIB for SNMP; RFC 3636 Definitions of Managed Objects for IEEE 802.3 MAUs; Cisco private MIBs
Management Interfaces	Web-based: HTTP/HTTPS; Command-line interface: Telnet, SSH, serial port
Interfaces and Indicators	Uplink: 2 (4402) or 4 (4404) 1000Base-X mini-GBIC transceiver slots (SFP); -LED indicators: link, activity; Service Port: 10/100 Mbps Ethernet (RJ45); LED indicators: link, activity; Utility Port: 10/100/1000 Mbps Ethernet (RJ45); LED indicators: link, activity; Expansion Slots: 1 (4402) or 2 (4404); Console Port: RS232 (DB-9 male, DTE interface); Other Indicators: Status, Alarm, Power Supply 1, Power Supply 2
Regulatory Compliance	CE Mark; Safety: UL 60950-1:2003, EN 60950:2000; EMI and susceptibility (Class A): U.S.: FCC Part 15.107 and 15.109; Canada: ICES-003, Japan: VCCI, Europe: EN 55022, EN 55024

Selected Part Numbers and Ordering Information

Cisco 4400 Series Wireless LAN Controller

AIR-WLC4402-12-K9	4400 Series WLAN Controller for up to twelve 1000 Series APs
AIR-WLC4402-25-K9	4400 Series WLAN Controller for up to twenty-five 1000 Series APs
AIR-WLC4402-50-K9	4400 Series WLAN Controller for up to fifty 1000 Series APs
AIR-WLC4404-100-K9	4400 Series WLAN Controller for up to one-hundred 1000 Series APs

For More Information

See the Cisco Wireless Web site: <http://www.cisco.com/go/wireless>

Cisco Wireless Control System (WCS)

Cisco Wireless Control System (WCS) is the industry leading platform for wireless LAN planning, configuration, and management. It provides a powerful foundation that allows IT managers to design, control, and monitor enterprise wireless networks from a centralized location, simplifying operations and reducing total cost of ownership. With Cisco WCS, network administrators have a single solution for RF prediction, policy provisioning, network optimization, troubleshooting, user tracking, security monitoring, VoWLAN configuration, and wireless LAN systems management. Robust graphical interfaces make wireless LAN deployment and operations simple and cost-effective. Detailed trending, inventory, performance, security, device, and analysis reports make Cisco WCS vital to ongoing network operations.

When to Sell

Sell This Product

Cisco Wireless Control System (WCS)

When a Customer Needs These Features

- Centralized platform for managing a complete network of Cisco WLAN controllers, Cisco Aironet lightweight access points and Cisco Wireless Location Appliances
- WLAN planning tools to increase the effectiveness of WLAN design and deployment including VoWLAN
- Real-time security monitoring
- Simplified client troubleshooting
- Secure cost effective guest access
- Quick and simple bulk configuration of controllers
- Non-Wi-Fi interference Detection

Key Features

- Intuitive GUI—easily configure, monitor, and troubleshoot wireless networks with minimal training
- Hierarchical maps—quickly access different geographies, campuses, buildings, floors, and regions for better visibility and control
- WLAN planning tools for effective and efficient WLAN design and deployment
- Extensive on-demand and automated reports for the entire system, performance, access points, clients, security, the RF environment and alarms
- Client troubleshooting tool for quick and easy client troubleshooting using simple step-by-step methods
- Cognio Spectrum Expert integration for investigating non-Wi-Fi interference sources within the vicinity of the Cisco lightweight access points
- Integrated location tracking for protecting assets and increasing WLAN security

- Policy management templates for easy creation and enforcement across an entire enterprise
- Secure guest access that allows organizations to keep their wireless networks secure while providing customers, vendors, and partners with controlled access to the WLAN
- Complete wireless intrusion protection and detection of rogue devices
- Simple, hands-off software upgrades and scalable configuration templates
- Robust APIs for integration with external software systems
- Supports converting an existing CiscoWorks WLSE (Models 1130-19 and 1133) to operate as a Cisco WCS to reduce capital expenses

Competitive Products

- Airwave AMP products
- Aruba Mobility Management System
- AirDefense

Specifications

Features	Cisco Wireless Control System (WCS)
<i>Minimum Server Requirements</i>	Windows 2003 SP1 or greater, or Redhat Linux AS/ES v4.0; VMware ESX Server 3.0.1 or later. (Minimum hardware requirements for a dedicated and guaranteed VMware server: Intel® Xeon Quad CPU: 3.15 GHz, 8 GB RAM, 200 GB HDD); Cisco WCS High-End Server: 3000 lightweight access points, 750 wireless LAN controllers, Intel® Xeon Quad CPU: 3.15 GHz, 8 GB RAM, 200 GB HDD; Cisco WCS Standard Server: 2000 lightweight access points, 150 wireless LAN controllers, Intel® Dual Core CPU: 3.2 GHz, 4 GB RAM, 80 GB HDD; Cisco WCS Low-End Server: 500 lightweight access points, 50 wireless LAN controllers, Intel® CPU: 3.06 GHz, 960 MB RAM, 30 GB HDD; CiscoWorks WLSE Models 1130-19 or 1133 running Cisco WCS: 1500 lightweight access points, 100 wireless LAN controllers, Intel Pentium 4 CPU: 3 GHz, 3 GB RAM, 38 GB HDD
<i>Minimum Client Requirements</i>	Internet Explorer 6.0/SP1 or later
<i>Management</i>	SNMP v1, v2c, v3
<i>Managed Devices</i>	Cisco 2000, 2100, 4100 and 4400 Series Wireless LAN Controllers; Cisco Catalyst 6500 Series Wireless Services Module (WISM), Cisco Catalyst 3750G Integrated Wireless LAN Controller, Cisco Wireless LAN Controller Module (WLCM and WLCM-E) for Integrated Services Routers; Cisco Aironet lightweight access points, Cisco Aironet lightweight outdoor mesh access points, and Cisco Wireless Location Appliance
<i>Database</i>	Integrated Solid Flow Engine SQL

Selected Part Numbers and Ordering Information

Cisco Wireless Control System (WCS)

WCS-APBASE-50	Cisco WCS Base License for 50 APs, Windows/Linux
WCS-APBASE-100	Cisco WCS Base License for 100 APs, Windows/Linux
WCS-APBASE-500	Cisco WCS Base License for 500 APs, Windows/Linux
WCS-APLOC-50	Cisco WCS with Location License for 50 APs, Windows/Linux
WCS-APLOC-100	Cisco WCS with Location License for 100 APs, Windows/Linux
WCS-APLOC-500	Cisco WCS with Location License for 500 APs, Windows/Linux
WCS-WLSE-UPG-K9:	Converting Existing CiscoWorks WLSE to Cisco WCS (Only supported on Linux platform for CiscoWorks WLSE Models 1130-19 and 1133)
WCS-WLSE-APB-50	Cisco WCS Base License for WLSE conversion supporting 50 APs, Linux
WCS-WLSE-APB-100	Cisco WCS Base License for WLSE conversion supporting 100 APs, Linux
WCS-WLSE-APB-500	Cisco WCS Base License for WLSE conversion supporting 500 APs, Linux
WCS-WLSE-APB-1000	Cisco WCS Base License for WLSE conversion supporting 1000 APs, Linux
WCS-WLSE-APB-2500	Cisco WCS Base License for WLSE conversion supporting 2500 APs, Linux
WCS-WLSE-APL-50	Cisco WCS Location License for WLSE conversion supporting 50 APs, Linux
WCS-WLSE-APL-100	Cisco WCS Location License for WLSE conversion supporting 100 APs, Linux
WCS-WLSE-APL-500	Cisco WCS Location License for WLSE conversion supporting 500 APs, Linux
WCS-WLSE-APL-1000	Cisco WCS Location License for WLSE conversion supporting 1000 APs, Linux
WCS-WLSE-APL-2500	Cisco WCS Location License for WLSE conversion supporting 2500 APs, Linux
WCS-LOC-UPG-K9	Upgrading Existing Cisco WCS Base to Cisco WCS Location: Supports tracking a single Wi-Fi device on demand or expanded location capabilities by adding a Cisco Wireless Location Appliance; Cisco WCS Location must be selected to support deployment of a Cisco Wireless Location Appliance.
WCS-APLOC-UPG-50	Cisco WCS Location Upgrade License supporting 50 APs, Windows/Linux
WCS-APLOC-UPG-100	Cisco WCS Location Upgrade License supporting 100 APs, Windows/Linux
WCS-APLOC-UPG-500	Cisco WCS Location Upgrade License supporting 500 APs, Windows/Linux
WCS-ENT-K9:	Enterprises licenses for large-scale deployments; Supports expanded location capabilities by adding a Cisco Wireless Location Appliance. 10,000 and 50,000 enterprises licenses include Cisco WCS Navigator license
WCS-ENT-1000	Cisco WCS Enterprise License with Location for 1000 access points, Windows/Linux on Multiple Cisco WCS Servers
WCS-ENT-2500	Cisco WCS Enterprise License with Location for 2500 access points, Windows/Linux on Multiple Cisco WCS Servers
WCS-ENT-10000	Cisco WCS Enterprise License with Location for 10,000 access points, Windows/Linux on Multiple Cisco WCS Servers. Includes Cisco WCS Navigator

WCS-ENT-50000	Cisco WCS Enterprise License with Location for 50,000 access points, Windows/Linux on Multiple Cisco WCS Servers. Includes Cisco WCS Navigator
AIR-WCS-DEMO-K9:	Cisco WCS Demonstration License (This license is only available from http://www.cisco.com/go/license . After requesting the license, go to Cisco Wireless Software Center (login required) to download Cisco WCS software.
AIR-WCS-DEMO-K9	Free Cisco WCS full featured, location-enabled, 30 day demonstration license supporting ten lightweight access points

For More Information

See the Cisco Wireless Web site: <http://www.cisco.com/go/wireless>

Cisco Wireless Control System Navigator

The Cisco Wireless Control System (WCS) Navigator delivers an aggregated platform for enhanced scalability, manageability, and visibility of large-scale implementations of the Cisco Unified Wireless Network. This solution gives network administrators cost-effective, easy access to information from multiple, geographically diverse Cisco WCS management platforms. It supports partitioning of the unified wireless network at the management level. It runs on a server platform with an embedded database.

When to Sell

Sell This Product

Cisco Wireless Control System (WCS) Navigator

When a Customer Needs These Features

- Manage up to 20 geographically diverse Cisco WCS management platforms with manageability of up to 20,000 Cisco Aironet lightweight access points
- Needs to partition the unified wireless network at the management level.
- Centralized and quick searches across the entire network, multiple Cisco WCS management platforms and all devices

Competitive Products

- Airwave AMP products
- Aruba Mobility Management System
- AirDefense

Key Features

- Intuitive GUI—Supports easy configuration and monitoring of multiple Cisco WCS management platforms with minimal training
- Real time network monitoring
- Network summary screen displays outstanding alarms, fault summaries, client counts, and status counts of all connected Cisco WCS management platforms and devices
- Secure single sign-on so that individual users do not need to be created on each Cisco WCS management platform
- Automated browser redirect automatically redirects to the corresponding Cisco WCS management platform detail page on searches or displays
- Centralized and quick searches across the entire network, multiple Cisco WCS management platforms and all devices
- Location tracking of client, Wi-Fi and rogue devices across the entire network
- Simplified setup and configuration
- Indoor and outdoor WLANs can be cost-effectively viewed from a single management console
- Detailed inventory reports can be automatically generated and scheduled and then exported by email or CSV file

Specifications

Features	Cisco Wireless Control System Navigator
Minimum server requirements	Windows 2003 SP1 or greater, or Redhat Linux AS/ES v4.0 High-End Server: Intel® Xeon Quad CPU; 3.15 GHz, 8-GB RAM, and 200-GB HDD
Minimum client requirements	Internet Explorer 6.0 with SP1 or later
Management	SNMP v1, v2c, and v3
Managed devices	Up to 20 Cisco WCS management platforms with manageability of up to 20,000 Cisco Aironet lightweight access points
Database	Integrated Solid FlowEngine Structured Query Language (SQL)

Selected Part Numbers and Ordering Information

Cisco Wireless Control System Navigator	
WCS-NAV-20	Cisco WCS Navigator License to support 20 Cisco WCS management platforms

For More Information

See the Cisco Wireless Web site: <http://www.cisco.com/go/wireless>

Cisco Wireless Location Appliance



The Cisco Wireless Location Appliance is the industry's first location solution that simultaneously tracks thousands of devices from directly within the WLAN infrastructure—bringing the power of a cost effective, high-resolution location solution to critical applications such as high-value asset tracking, network location services such as RF capacity management, troubleshooting, and location based security and business policy enforcement. Part of the Cisco Location Solution.

When to Sell

Sell This Product

Cisco Wireless Location Appliance

When a Customer Needs These Features

- Advanced and scalable location tracking that simultaneously tracks thousands of wireless users and devices to within a few meters of their physical location indoors and to the closest access point outdoors
- Integrated location tracking using existing Cisco unified wireless enabled infrastructure, minimizing capital expenditures and helping ensure better WLAN visibility
- Supports integration with customizable location-based applications through tight and transparent integration with the appliance's open API
- Supports chokepoint-based notifications as well as receipt of telemetry, battery, and emergency group information from Cisco Compatible Extensions Wi-Fi Tags

Key Features

- **Increased Location Accuracy**—Cisco Wireless Location Appliance uses the Cisco Systems® patent-pending RF fingerprinting technology to determine the location of wireless devices. Cisco provides the only WLAN infrastructure that correlates known RF characteristics of a building, such as multipath or attenuation, with real-time user information to track mobile devices within a few meters
- **Audit Trails and Database Maintenance**—Up to 30 days of location and statistical wireless device information can be archived and replayed; helps customers optimize their business processes
- **Scalability**—Thousands of wireless clients and Wi-Fi tags can be tracked simultaneously helping ensure that location services can be applied to an entire enterprise environment
- **Lowered Total Cost of Ownership**—Reduces operating expenses by using the existing Cisco WLAN network infrastructure in conjunction with the location appliance. This results in being more cost-effective than proprietary or single-purpose location tracking solutions by using standard 802.11 components which do not require dedicated access points for location tracking or an independent management system

- **Chokepoint-based notifications**—High-accuracy deterministic location-based notifications are triggered by Cisco Compatible Extensions Wi-Fi tags as they come within range of a chokepoint
- **Location Based Applications**—Applications such as E911, asset management, ERP tools, and workflow and automation systems can take advantage of location-based information. Receipt of specialized telemetry, emergency group and battery notifications from properly enabled Cisco Compatible Extensions Wi-Fi Tags allows implementation of specialized location-based applications
- **Cisco Location Appliance API Program**—Customers and partners can interface with the Cisco Wireless Location Appliance open API to create customized location applications and solutions using SOAP/XML
- **Wi-Fi tag Cisco Compatible Extension program**—Improved consistency and interoperability among Cisco's Compatible Extensions technology partners and benefit from their latest innovation and technology advancements

Specifications

Features	Cisco Wireless Location Appliance
Memory	1-GB memory
Ports	Serial: One 9-pin connector, RJ-45: Two RJ-45 connectors for connection to two 10/100/1000 Ethernet controllers, 2 USB ports: One USB connector in front and one in back, 2 PS2 ports: One mouse and one keyboard, 2 VGA ports: One in front and one in back
Connectivity	Network: Two 10/100/1000 (RJ-45) ports
Management	SNMP v1, v2c, and v3
Network Management	Cisco WCS v.3.0 or greater running Internet Explorer 6.0/Service Pack 1 or later
Network Devices	Cisco 2100, 4100 and 4400 Series Wireless LAN Controllers; Cisco Catalyst 6500 Series Wireless Services Module (WISM), Cisco Catalyst 3750 Series Integrated Wireless LAN Controller, Cisco Wireless LAN Controller Module (WLCM and WLCM-E) for Integrated Services Routers; Cisco Aironet lightweight access points Wi-Fi enabled laptops, PDAs, voice over Wi-Fi handsets, Cisco Compatible client devices, Cisco client devices, and non-Wi-Fi mobile devices equipped with active Wi-Fi tags 125 kHz-based chokepoints using AeroScout Exciters or WhereNet
Programming Interfaces	SOAP/XML APIs
Dimensions (H x W x D)	1.68 x 16.8 x 23 in. (4.27 x 42.7 x 58.4 cm)
Weight	28.6lbs (13kg) maximum
Power	AC power supply wattage: 230W; AC power supply voltage: 100-120V at 50-60Hz; 200-240V at 50-60Hz
Environmental	Operating Temperature: 50 to 95°F (10-35°C); Storage Temperature: -40 to 149°F (-40°-65°C)
Approvals and Compliance	Safety UL 60950, CAN/CSA -C22.2 No. 60950, EN60950, IEC 60950; EMC FCC Part 15 (CFR 47) Class A, ICES-003 Class A, EN 55022 Class A, CISPR22 Class A, AS/NZS 3548 Class A, VCCI Class A, EN 55024, EN 50082-1

Selected Part Numbers and Ordering Information

Cisco Wireless Location Appliance

AIR-LOC2710-L-K9 Cisco 2700 Series Wireless Location Appliance (May 2006 Model Release)

For More Information

See the Cisco Wireless Web site: <http://www.cisco.com/go/wireless>

Cisco 500 Series Wireless Express Access Point

The Cisco 500 Series Wireless Express Access Point is a single band 802.11g access point ideal for small or medium sized business offices, classrooms, small warehouses or similar indoor environments. It is a key part of the Cisco Mobility Solution, offering enterprise-class security, performance and flexibility at a price point SMBs can afford. Easy to deploy and manage with the Cisco Configuration Assistant, the Wireless Express Access Points can be supported in standalone mode or controller-based mode to accommodate a diverse range of deployment and business mobility requirements.

When to Sell

Sell This Product

Cisco 500 Series Wireless Express Access Point

When a Customer Needs These Features

- Cost effective scalability of up to 12 access points
- Ideal for small and medium sized businesses with under 250 employees
- Offers deployment flexibility with standalone or controller based options.
- Enables easy to use, business-class management, security and mobility services

Key Features

- IEEE 802.11g radio single band support provides 54 Mbps capacity and backward compatibility with legacy 802.11b clients
- Complies with IEEE 802.11i security standards and is WPA and WPA2 certified. Enables hardware-assisted AES encryption to provide high security without performance degradation
- Industry-leading radio design provides robust signals to long distances and mitigates the effects of multi-path signal propagation for more consistent coverage
- Orderable as a standalone access point or as a controller based access point using Lightweight Access Point Protocol (LWAPP)
- Variable transmit power settings that allow access point coverage to be tuned to accommodate various requirements; Low-dBm setting supports closer spacing of access points in high density deployments
- Integrated antennas that allow the complete system to be deployed “out of the box” without external antennas; Provides omni-directional coverage for offices and similar RF environments.
- Wi-Fi Certified

Competitive Products

- 3Com AP
- DLink: DWS 1008
- Symbol Technologies Access Points, 100, 200, 300

Specifications

Features	Cisco 500 Series Wireless Express Mobility Controller
Software	Cisco IOS Software Release 1.0 or later (standalone); Cisco Unified Wireless Network Software Rel. 1.0 or later (controller-based)
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.
Data Rates Supported	802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps
Network Standard	IEEE 802.11b and 802.11g
Uplink	Autosensing 802.3 10/100BASE-T Ethernet
Frequency Band and Operating	Americas (FCC)—A: 2.412 to 2.462 GHz; 11 channels Europe (ETSI)—E: 2.412 to 2.472 GHz; 13 channels Japan-P (TELEC 2 (Japan2) Cnfg): 2.412 to 2.484 GHz; 13 channels Orthogonal Frequency Division Multiplexing (OFDM)
Nonoverlapping Channels	802.11b/g: Up to 3
Receive Sensitivity (Typical)	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
Available Transmit Power Settings	802.11b: Complementary Code Keying (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); 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)
Range ²	Indoor (distance across open office environment) - 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) @ 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; Outdoor- 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
Antennas	2.4 GHz, gain: 3.0 dBi, Horizontal beam width: 360°

<i>Features</i>	
<i>Cisco 500 Series Wireless Express Mobility Controller</i>	
<i>Security</i>	Standalone Access Point: wep, eap, wpa, Wpa-psk, Wpa2, Wpa2-psk, Mac & eap; Dynamic- wep, tkip, Aes ccmp, open-eap network-eap, Open, mac, network-eap; Controller-based Access Point: Wep, Eap, Wpa, Wpa-psk, Wpa2, Wpa2-psk, MAC, Mac & eap; Encryption: Wep/shared, wep, Tkip/aes; Authentication: Open, 802.1x, Wpa-psk, 802.1x, Wpa2-psk, Open, mac, 802.1x
<i>Compliance Standards</i>	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, RSS-210 (Canada), EN 300.328 (Europe), ARIB-STD 33 (Japan), ARIB-STD 66 (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, FCC Bulletin OET-65C, RSS-102
<i>Status LEDs</i>	External: Status LED indicates operating state, association status, error/warning condition, boot sequence, and maintenance status; Internal: Ethernet LED indicates activity
<i>Dimensions (H x W x D)</i>	7.5 x 7.5 x 1.3 in. (19.1 x 19.1 x 3.3 cm)
<i>Weight</i>	1.5 lb (0.67 kg)
<i>Temperature</i>	32 to 104°F (0 to 40°C)
<i>Humidity</i>	10 to 90 percent humidity (noncondensing)
<i>System Memory</i>	32 MB RAM; 16 MB flash
<i>Input Power</i>	100 to 240 VAC; 50 to 60 Hz (power supply); 6 to 57 VDC (device)
<i>Power Draw</i>	12.2W maximum
<i>Warranty</i>	1 Year

1. Maximum power setting will vary by channel and according to individual country regulations
2. Ranges and actual throughput vary based upon numerous environmental factors so individual performance may differ

Part Numbers and Ordering Information

Cisco 500 Series Wireless Express Access Point

AIR-AP521G-x-K9	802.11b/g access point (Standalone mode), X=regulatory domain
AIR-LAP521G-x-K9	802.11b/g access point (Controller-based mode), X=regulatory domain

For More Information

See the Cisco Wireless Web site: <http://www.cisco.com/go/mobilityexpress>

Cisco 500 Series Wireless Express Mobility Controller

The Cisco 500 Series Wireless Express Mobility Controller is a network appliance designed to optimize the wireless networks of small and medium sized businesses. As a core element of the Cisco Mobility Express Solution, the Mobility Controller can support up to six Cisco 500 Series Wireless Express access points per controller and up to two controllers per network. The Mobility Controller harnesses the power of Cisco Lightweight Access Point Protocol (LWAPP) technology to deliver best-in-class automatic radio optimization, mobility performance, multi-access-point management and support for advanced mobility services such as secure internet guest access and optimized voice over Wi-Fi.

When to Sell

Sell This Product *When a Customer Needs These Features*

<i>Cisco 500 Series Wireless Express Mobility Controller</i>	<ul style="list-style-type: none"> • Cost effective solution ideal for small and medium sized businesses with up to 250 employees • Scalability up to 6 access points per controller and up to 2 controllers per network • Best-in-class security authentication • A streamlined management tool and multi-access-point Radio Resource Management • Support for Guest Access or Voice over WLAN mobility services
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Key Features

- Supports Cisco LWAPP technology to communicate between access points and controllers for simplified deployment and management
- Multi-access point Radio Resource Management coordinates access points in real-time to optimize radio coverage and capacity while avoiding points of interference.
- Supports industry standard authentication mechanisms, including WEP, MAC Filtering, WPA, WPA2, WebAuth, and EAP to enable scalable security architectures and minimize interoperability issues
- Supports up to eight SSID/VLANs enabling one physical WLAN infrastructure to be shared as a virtual wired/wireless network
- Mobility Services-Ready—supports Secure Guest Access and Voice over Wireless LAN optimization services

Competitive Products

- 3Com
- AP
- D-Link DWL-8220AP
- Symbol WS2000

Specifications

Features	Cisco 500 Series Wireless Express Mobility Controller
<i>Physical interfaces</i>	2 10/100 Ethernet ports for uplink and management 2 USB console ports (future expansion) 1 RJ-45 serial port for direct console access
<i>Wired/Switching/Routing</i>	IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX specification, and IEEE 802.1Q VLAN tagging
<i>Management Options</i>	Cisco Configuration Assistant software (recommended) Embedded Web-based device manager Command-line interface for troubleshooting (SHO/DEBUG only) using Telnet, SSH, or console port access
<i>Security/authentication standards</i>	None/Open, WEP/Open, MAC Filtering, WPA/Open with EAP, WPA/Network EAP, WPAPSK/Open with EAP, WPA-PSK/Network EAP, WPA2/AES CCMP. Supported EAP types include PEAP, LEAP, EAP-TLS, EAP-GTC, and EAP-SIM
<i>RADIUS Authentication</i>	None/Open, WEP/Open, MAC Filtering, WPA/Open with EAP, WPA/Network EAP, WPAPSK/Open with EAP, WPA-PSK/Network EAP, WPA2/AES CCMP. Supported EAP types include PEAP, LEAP, EAP-TLS, EAP-GTC, and EAP-SIM
<i>Multiple SSIDs</i>	8 SSIDs supported (each access point may support multiple SSIDs) 1 SSID broadcast in SSID beacon
<i>Secure Guest Access Support</i>	Allows for creation of guest SSID/VLAN through Cisco Configuration Assistant, and creation of guest user accounts and configuration of login page using Cisco Configuration Assistant
<i>Voice-over-Wireless LAN Optimization</i>	Delivers quality of service, call admission control, fast inter-access point hand-off, and other optimization features to improve the quality of a wireless voice infrastructure.
<i>Warranty</i>	1 year

Part Numbers and Ordering Information

Cisco 500 Series Wireless Express Mobility Controller	
AIR-WLC526-K9	Cisco 526 Wireless Express Mobility Controller for up to six Cisco 500 Series Wireless Express Access Points
AIR-AP521G-x-K9	Cisco 521 Wireless Express Access Point (Stand alone)
AIR-LAP521G-x-K9	Cisco 521 Wireless Express Access Point (Controller mode)

For More Information

See the Cisco Wireless Web site: <http://www.cisco.com/go/mobilityexpress>

Cisco Configuration Assistant

The Cisco Configuration Assistant is a comprehensive, easy-to-use network configuration tool that simplifies the task of configuring, deploying, and administering Cisco network solutions including the Cisco Mobility Express. An integral part of the Cisco Smart Business Communications System, the Configuration Assistant is a PC-based application with a simple graphical user interface that can discover and dynamically configure routers, switches, wireless access points and controllers and Unified Communications call-routing and voicemail systems in the network. It can be used to generate status reports, synchronize passwords, and upgrade software across the network for improved security and performance.

When to Sell

Sell This Product

Cisco Configuration Assistant

When a Customer Needs These Features

- Ideal for small and medium sized businesses with under 250 employees
- Integration with Cisco Smart Business Communications System for streamlined management across multiple technologies

Key Features

- Holistic, network-level insight through multiple network views
- Simplified network design and deployment through dynamic discovery
- Clear separation of services through VLAN highlighting
- Improved network visibility with continual health monitoring
- Simplified network status reporting
- Enhanced security for configuration and monitoring activities
- Simplifies software updates with drag and drop Cisco IOS Software Upgrade feature

System Requirements

Features	Cisco Configuration Assistant System Requirements
Operating System	Windows 2000 Professional (Service Pack 3 or later) or Windows XP Professional (Service Pack 1 or later)
Disc Space	200 MB
Hardware	PC with Pentium IV
Memory	512 MB
PC Hardware	1 GHz
Multiple SSIDs	8 SSIDs supported (each access point may support multiple SSIDs) 1 SSID broadcast in SSID beacon
Screen Resolution	1024 x 768

For More Information

See the Cisco Wireless Web site: <http://www.cisco.com/go/sbcs>