

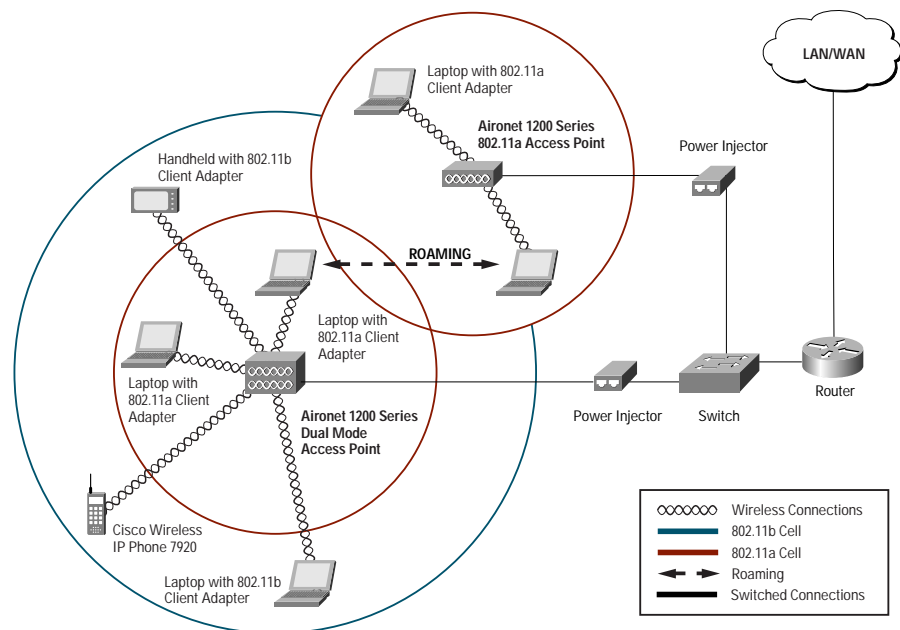
Cisco Aironet 5 GHz 54 Mbps Wireless LAN Client Adapter



The Cisco Aironet® 5 GHz 54 Mbps Wireless LAN client adapter is an Institute of Electrical and Electronic Engineers (IEEE) 802.11a-compliant CardBus adapter that operates in the UNII-1 and UNII-2 bands. The client adapter complements the Cisco Aironet 1200 Series 802.11a Access Point, providing a solution that combines performance and mobility with the security and manageability that enterprises require.

Wireless LAN client adapters can increase productivity by enabling mobile users to have network and Internet access anywhere within a building that is equipped with a wireless network infrastructure. Wireless client adapters connect a variety of devices to a wireless network either in ad hoc peer-to-peer mode or in infrastructure mode with access points. With this client adapter, you can quickly add new employees to a network, support temporary workgroups, or enable Internet access in conference rooms or other meeting spaces (Figure 1). And the Cisco Aironet client solution is easy to use, making the benefits of wireless mobility completely transparent.

Figure 1 Client devices equipped with 802.11a wireless client adapters can roam freely throughout a facility via communications with multiple IEEE 802.11a access points and dual-mode access points.





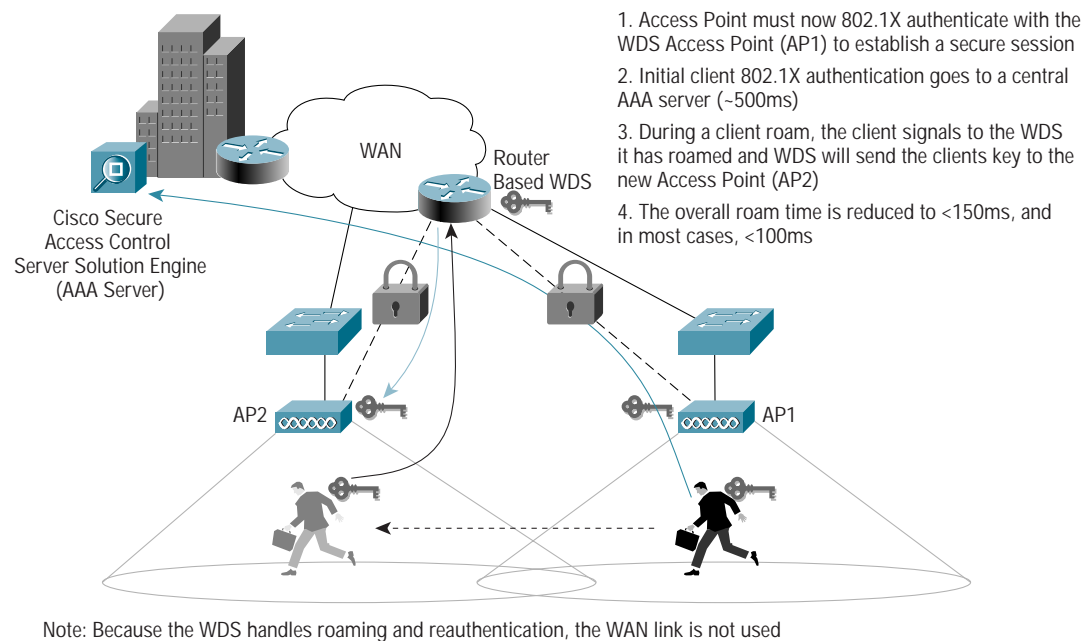
Cisco Structured Wireless-Aware Network

The Cisco Aironet 5 GHz 54 Mbps Wireless LAN client adapter is a key component of the Cisco Structured Wireless-Aware Network. The Cisco Structured Wireless-Aware Network is an innovative, comprehensive Cisco framework for deploying, operating and managing hundreds to thousands of Cisco Aironet access points using the Cisco infrastructure. The Cisco Structured Wireless-Aware Network extends to the wireless LAN the same level of security, scalability, and reliability that customers have come to expect in their wired LAN by introducing “wireless-aware” capabilities into the Cisco infrastructure.

Wireless domain services (WDS) is introduced with the Cisco Structured Wireless-Aware Network. WDS is a collection of Cisco IOS Software features that enhance WLAN client mobility and simplify WLAN deployment and management. These services, supported on access points and client devices today and on specific Cisco LAN switches and routers in 2004, include fast secure roaming and IEEE 802.1X local authentication.

Fast secure roaming is supported by Cisco and Cisco Compatible client devices in conjunction with Cisco Aironet, Cisco IOS Software-based access points. With fast secure roaming, authenticated client devices can roam securely from one access point to another without any perceptible delay during reassociation. Fast secure roaming supports latency-sensitive applications such as wireless voice over IP (VoIP), enterprise resource planning (ERP), or Citrix-based solutions (Figure 2).

Figure 2 Fast Secure Roaming





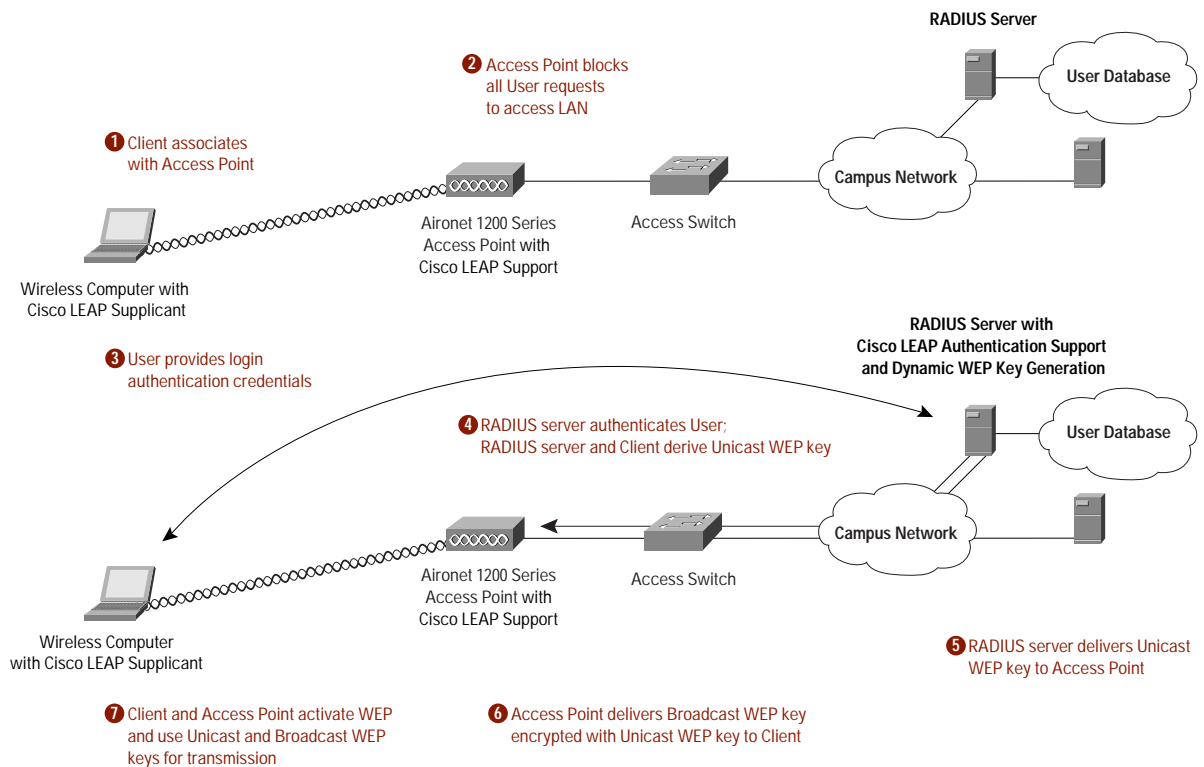
Industry-Leading Enterprise Security Solution

With Cisco, you can confidently deploy a wireless solution that provides robust enterprise-class security. All Cisco Aironet products feature the award-winning Cisco Wireless Security Suite, which is based on the IEEE 802.1X standard for port-based network access.

The Cisco Wireless Security Suite takes advantage of the Extensible Authentication Protocol (EAP) framework for user-based authentication. (Figure 3) It supports a variety of 802.1X authentication types including Cisco LEAP, Extensible Authentication Protocol-Transport Layer Security (EAP-TLS) and types that operate over EAP-TLS, such as Protected Extensible Authentication Protocol (PEAP), and EAP-Subscriber Identity Module (EAP-SIM). The Cisco Wireless Security Suite is a scalable, centrally managed security solution that includes:

- Mutual authentication to ensure that only legitimate clients associate with legitimate and authorized network RADIUS servers
- Dynamic per-user, per-session encryption keys that can be set to automatically change on a regular basis to protect the privacy of the transmitted data
- Several enhancements to strengthen wired equivalent privacy (WEP) keys, both the static WEP keys and the dynamic keys that are derived as a result of a successful 802.1X authentication. These WEP enhancements include Temporal Key Integrity Protocol (TKIP), support for Message Integrity Check (MIC), per-packet key hashing, and broadcast key rotation

Figure 3 The Cisco Wireless Security Suite is an Enterprise-Class Security System Based on the 802.1X Architecture





Enhanced Client Network Management Features

The Cisco Aironet Client Utility, with an intuitive graphical user interface, provides an easy way to configure, monitor, and manage the Cisco Aironet 5 GHz Wireless LAN Client Adapter. Enhanced client network management features include:

- *Site-survey tools*—Easy-to-understand detailed graphical information to assist in the placement of access points (Figure 4)
- *Troubleshooting facility*—Step-by-step details on the process of connecting to an access point that highlights why a connection failed (Figure 5)
- *Profile Manager*—Create specific profile settings for various environments, such as the office or home, making it simple for telecommuters and business travelers to move from one environment to another
- *Customized Profile settings*—Individually select channel, service set identifier (SSID), WEP key, and the authentication method for different locations
- *Cisco LEAP authentication status screen*—Status updates regarding the Cisco LEAP authentication process
- *Autoselection of Cisco LEAP profile*—Automatic selection of a Cisco LEAP profile without having to store the Cisco LEAP username and password in the profile
- *System Tray icon*—Easy access to wireless LAN connection information and one-click access to common actions such as selecting the right profile for a wireless LAN (Figure 6)
- *Aironet Client Monitor*—Optional application that runs "behind" a System Tray icon and provides a subset of Aironet Client Utility features such as status information about the client adapter and access to basic tasks such as selecting a profile
- *Support of popular operating systems*—Windows 98/98SE, Windows 2000, Windows ME, Windows XP, Mac OS 9.X, and MAC OS X (10.2 or later).

Figure 4 Site survey tools included with Cisco Aironet Client Utility assist in the correct placement of access points.

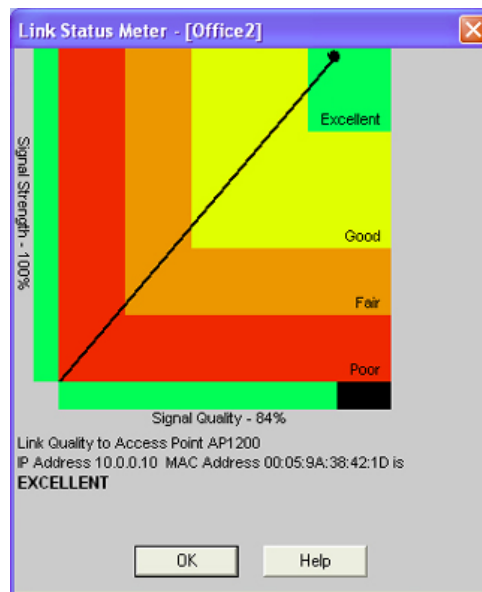




Figure 5 Troubleshooting Facility gives step-by-step details on the process of connecting to an access point.

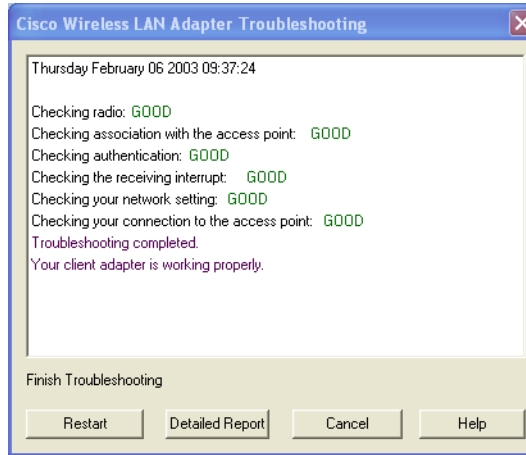
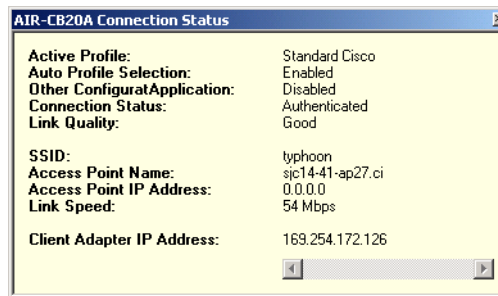


Figure 6 System Tray icon provides easy access to wireless LAN connection information and one-click access to common actions.



Client firmware, drivers, utilities and security modules are easily installed using the Cisco Aironet Wireless LAN Client Adapter Installation Wizard for Microsoft Windows operating systems. The wizard can run in an interactive mode or in an automated “silent mode” without user interaction, triggered by existing IT software distribution tools. The wizard image file is a self-extracting executable (.exe) file (Figure 7).

Figure 7 Cisco Aironet Wireless LAN Client Adapter Installation Wizard for Microsoft Windows operating systems.





Enterprise-Class Performance

Cisco's innovative radio and antenna design delivers industry-leading 802.11a enterprise performance. It provides for maximum capacity and scalability across the enterprise through eight non-overlapping channels in the UNII-1 and UNII-2 bands. The integrated 5 dBi gain patch antenna optimizes range. The -68 dBm receive sensitivity at 54 Mbps provides high-data-rate range performance. Advanced signal processing in the Cisco Aironet 5 GHz Wireless LAN Client Adapter helps manage the multipath propagation often found in office environments and intelligent filtering addresses ambient noise and interference that can decrease network performance. Various transmit power settings on the Cisco Aironet client adapter enable you to select range capabilities.

Product Features and Benefits

Product Features	Benefit
Industry-leading security	IEEE 802.1X support, including Cisco LEAP, PEAP, EAP-TLS and EAP-SIM, for mutual authentication with dynamic per-user, per session WEP keys and TKIP WEP enhancements.
Multiple transmit power settings (20 mW/(13 dBm), 10 mW/(10 dBm), and 5 mW (7 dBm))	Provides flexibility to limit RF coverage. Multiple transmit power settings are especially useful when coupled with one of the broad antenna offerings to direct or limit RF coverage.
Hardware-accelerated WEP encryption	Minimum degradation when encryption is enabled, resulting in maximum throughput.

Product Specifications

Part Number	AIR-CB20A-x-K9 (802.11a CardBus Adapter with Antenna, x = Regulatory Domain) AIR-CB20A-x-K9-40 (802.11a CardBus Adapter with Antenna, x = Regulatory Domain, 40 Pack) A=Americas S=Singapore T=Taiwan J= Japan Not all regulatory domains have been approved. As they are approved, the part numbers will be available on the Global Price List.
Form Factor	CardBus Type II
Interface	32-bit CardBus (PCI)
Operational voltage	3.3 V (+/- 0.33 V)
LED	Status (green) and Activity (amber)
Data Rates Supported	6, 9, 12, 18, 24, 36, 48, 54 Mbps (configurable as fixed or auto selecting to extend range)
Network Standard	IEEE 802.11a
Frequency Band	<ul style="list-style-type: none"> • 5.15 to 5.35 GHz (FCC UNII 1 and UNII 2) • 5.15 to 5.25 GHz (TELECOM) • 5.15 to 5.25 GHz (Singapore) • 5.25 to 5.35 GHz (Taiwan)



Product Specifications (Continued)

Media Access Protocol	Carrier sense multiple access with collision avoidance (CSMA/CA)
Wireless Medium	Orthogonal Frequency Division Multiplexing (OFDM)
Modulation	<ul style="list-style-type: none"> • (OFDM sub-carrier) • BPSK @ 6 and 9 Mbps • QPSK @ 12 and 18 Mbps • 16-QAM @ 24 and 36 Mbps • 64-QAM @ 48 and 54 Mbps
Selectable Operating Channels	FCC: 8 channels (UNII-1 4 channels and UNII-2 4 channels); 4 channels for Japan, Singapore, and Taiwan
Receive Sensitivity (typical)	<ul style="list-style-type: none"> • 6 Mbps: -85 dBm • 9 Mbps: -84 dBm • 12 Mbps: -82 dBm • 18 Mbps: -80 dBm • 24 Mbps: -77 dBm • 36 Mbps: -73 dBm • 48 Mbps: -69 dBm • 54 Mbps: -68 dBm
Available transmit power settings	<ul style="list-style-type: none"> • 20 mW (13 dBm) • 10 mW (10 dBm) • 5 mW (7 dBm) <p>Maximum power setting will vary according to individual country regulations.</p>
Current steady state (typical)	<ul style="list-style-type: none"> • Transmit: 520 mA • Receive: 580 mA • Sleep: 20 mA
Range (typical communications to a 1200 Series Access Point with a 5 GHz radio module using a 6 dBi gain patch antenna or 5 dBi omni directional antenna)	<p>Omni directional Antenna:</p> <ul style="list-style-type: none"> • Indoor: <ul style="list-style-type: none"> – 60 ft (18m) @ 54 Mbps – 130 ft (40m) @ 18 Mbps – 170 ft (52m) @ 6 Mbps • Outdoor: <ul style="list-style-type: none"> – 100 ft (30m) @ 54 Mbps – 600 ft (183m) @ 18 Mbps – 1000 (304m) @ 6 Mbps <p>Patch Antenna:</p> <ul style="list-style-type: none"> • Indoor: <ul style="list-style-type: none"> – 70 ft (21m) @ 54 Mbps – 150 ft (45m) @ 18 Mbps – 200 ft (61m) @ 6 Mbps • Outdoor: <ul style="list-style-type: none"> – 120 ft (36m) @ 54 Mbps – 700 ft (213m) @ 18 Mbps – 1200 ft (355m) @ 6 Mbps




Product Specifications (Continued)

Compliance	<p>802.11a</p> <ul style="list-style-type: none"> • Standards: <i>Safety:</i> <ul style="list-style-type: none"> – UL 1950 – CSA 22.2 No. 950-95 – IEC 60950 – EN 60950 <i>Radio Approvals:</i> <ul style="list-style-type: none"> – FCC Part 15.401-15.407 – RSS-210 (Canada) – EN 301.893 (Europe) – ARIB STD-T71 (Japan) – AS 4268.2 (Australia) <i>EMI and Susceptibility (Class B):</i> <ul style="list-style-type: none"> – FCC Part 15.107 and 15.109 – ICES-003 (Canada) – VCCI (Japan) – EN 301.489-1 and -17 (Europe) <i>Other:</i> <ul style="list-style-type: none"> – IEEE 802.11a – FCC Bulletin OET-65C – RSS-102
Power management	<p>3 levels of power consumption available, including:</p> <ul style="list-style-type: none"> • CAM (Constantly Awake Mode) • Fast PSP (Power Save Mode) • Max PSP (Maximum Power Savings)
Antenna	<p>Integrated 5dBi gain patch antenna</p>
Security architecture client authentication	<p>Cisco Wireless Security Suite including:</p> <p>Authentication:</p> <ul style="list-style-type: none"> • 802.1X support for Cisco LEAP, PEAP, EAP-TLS, and EAP-SIM to yield mutual authentication and dynamic, per-user, per-session WEP keys • MAC address and by standard 802.11 authentication mechanisms <p>Encryption:</p> <ul style="list-style-type: none"> • Support for static and dynamic IEEE 802.11 WEP keys of 40 bits and 128 bits • TKIP WEP enhancements: key hashing (per-packet keying), message integrity check (MIC) and broadcast key rotation
Drivers	<p>Windows 98/98SE, Windows ME, Windows 2000, Windows XP, Mac OS 9.X, and Mac OS X (10.2 or later)</p>
Dimensions (HxWxD)	<p>0.19 in. (0.49 cm) x 2.13 in. (5.4 cm) x 4.46 in. (11.3 cm)</p>
Environmental	<p>-30° to 70°C; 95% humidity (noncondensing)</p>
Warranty	<p>Limited lifetime</p>



Product Specifications (Continued)

Wi-Fi Certification	
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Product System Requirements

A device that supports a CardBus Type II client adapter and operates one of the supported operating systems: Windows, 98/98SE, Windows ME, Windows 2000, Windows XP, Mac OS 9.X, and Mac OS X (10.2 or later).



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