Cisco Aironet

350 Series Mini-PCI

The Cisco Aironet® 350 Series Mini-PCI (MPI352) Client Adapter is an embedded solution that complements the industry-leading 11-Mbps Cisco Aironet 350 Series. Based on direct sequence spread spectrum (DSSS) technology operating in the 2.4 GHz Industrial, Science and Medical (ISM) band, the MPI352 client adapter complies with the IEEE 802.11b standard, ensuring interoperability with other compliant wireless LAN (WLAN) products.

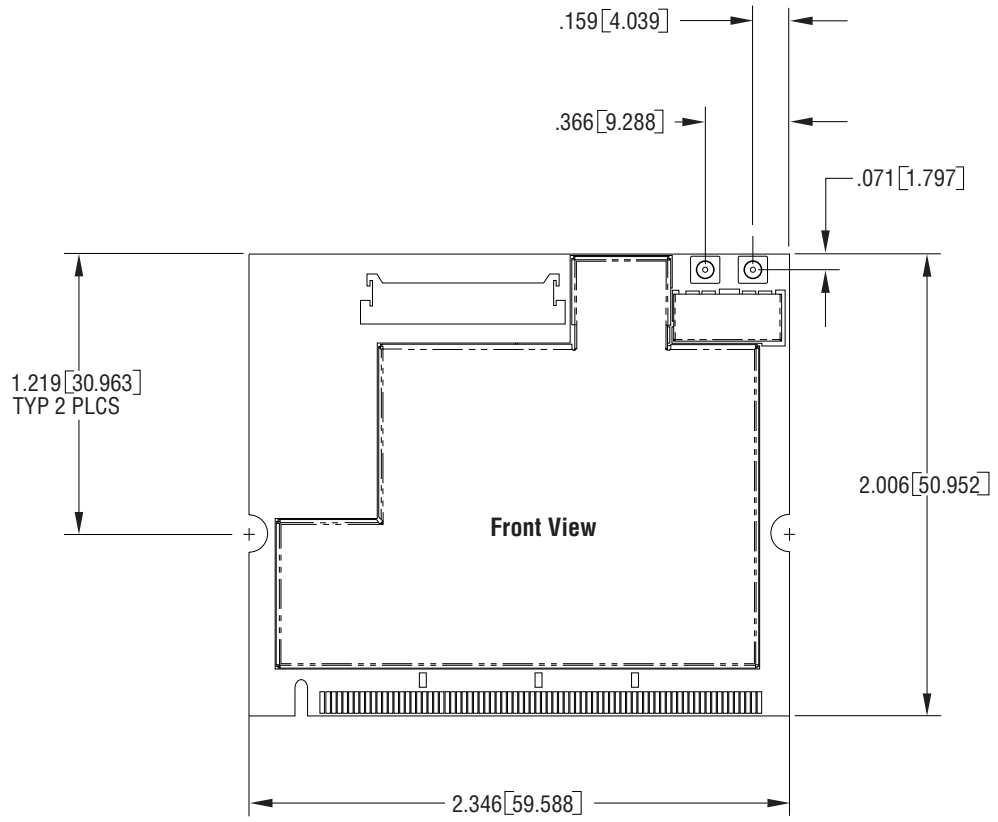
Key Features

- IEEE 802.11b high-rate standard compliance
- Type IIIa Mini-PCI form factor for standard compatibility in a variety of mobile devices
- Industry-leading range and throughput performance
- Up to 100mW transmit power
- Supports hardware accelerated 128-bit WEP RC4 encryption for data security with negligible performance degradation
- 802.1x security support via EAP and LEAP for the most advanced wireless authentication scheme available
- World mode for international mobility across regulatory domains
- Dual antenna connectors supporting diversity for improved multipath compensation
- True PCI bus interface
- Support for all popular operating systems

An Embedded Adapter

The Cisco Aironet MPI352 provides OEM vendors an embedded client adapter with the proven performance, security, and manageability that customers have come to expect from Cisco. The Mini-PCI small form factor (approximately 51mm x 60mm) and lightweight (37g) design are ideally suited for PC notebooks, Internet appliances, and other mobile devices. Drivers are supported for all popular operating systems, including Windows 95, 98, NT 4.0, Windows 2000, Windows Me, Mac OS Version 9.x, and Linux. A complete set of tools and documentation is available for OEM integration and testing.

Figure 1 Cisco Aironet MPI352 Schematic



Best Available Performance

Designed with 100 mW transmit power and the best receive sensitivity in the industry, the Cisco Aironet MPI352 client adapter achieves the longest range and strongest signal available. The device supports distances of up to 130 ft indoors and 800 ft outdoors at 11 Mbps. Automatic data rate selection extends range by switching to a lower data rate, if required, to maintain connectivity. As a pioneer and leader in the WLAN industry, Cisco Aironet radio technology has advanced signal processing to help manage multipath propagation. Intelligent filtering minimizes ambient noise and interference that hampers wireless performance. The Cisco Aironet 350 Series provides the highest throughput available in the 802.11b market. The Cisco Aironet MPI352 achieves this excellent performance with minimal power consumption by offering three power management levels, including constantly awake mode, power save mode, and maximum power save mode.

Enhanced Client Management

The Cisco Aironet Client Utility, with an intuitive graphical user interface, provides an easy way to configure, monitor, and manage the Cisco Aironet MPI352 client adapter. The client utility includes site-survey tools that present easy-to-understand detailed graphical information to assist in the placement of access points. Quantifiable data is presented, including signal-to-noise ratio measured in decibels (dB) and signal level and noise level measured in decibels below 1mW (-dBm). Profiles allow a user to create 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. Profile settings include channel selection, service set identifier (SSID), wired equivalent privacy (WEP) key, and authentication method for different locations.

World Mode for International Roaming

Cisco Aironet MPI352 client adapter simplifies deployment and mobility for international travelers and multinational organizations with a world mode feature. This mode allows the Cisco Aironet MPI352 to automatically inherit channel configuration settings directly from Cisco Aironet access points. This feature allows a single client adapter to be used around the world while maintaining regulatory compliance.

Industry-Leading Centralized Security Solution

Cisco Aironet wireless solutions provide the most advanced security solution available. Based on IEEE 802.1x standard, the Cisco Aironet security architecture utilizes the Extensible Authentication Protocol (EAP), a proposed open standard that enables wireless client adapter manufactures and Remote Access Dial-In User Service (RADIUS) server vendors to independently develop interoperable client- and server-side security software. This new security architecture provides centralized user-based authentication integrated with network logon. It uses an EAP-enabled RADIUS server such as the CiscoSecure Access Control Server 2000 Version 2.6 or later. When the user supplies a username and password, the client interacts with the RADIUS server through a Cisco Aironet access point. When the RADIUS server authenticates the client, the server and client negotiate a single-session, single-user encryption key and the RADIUS server transmits the key to the access point. With this centralized and standards-based architecture, wireless security scales to meet the requirements of any organization. The Cisco Aironet MPI352 client adapter supports the standard WEP security architecture, with both 40-bit and 128-bit RC4 encryption keys. Unlike some competitive products, the Cisco Aironet Series handles encryption in hardware resulting in negligible performance degradation.

Figure 2 With the Cisco security solution, authentication is based on username and password, and each user gets a unique, session-based encryption key.

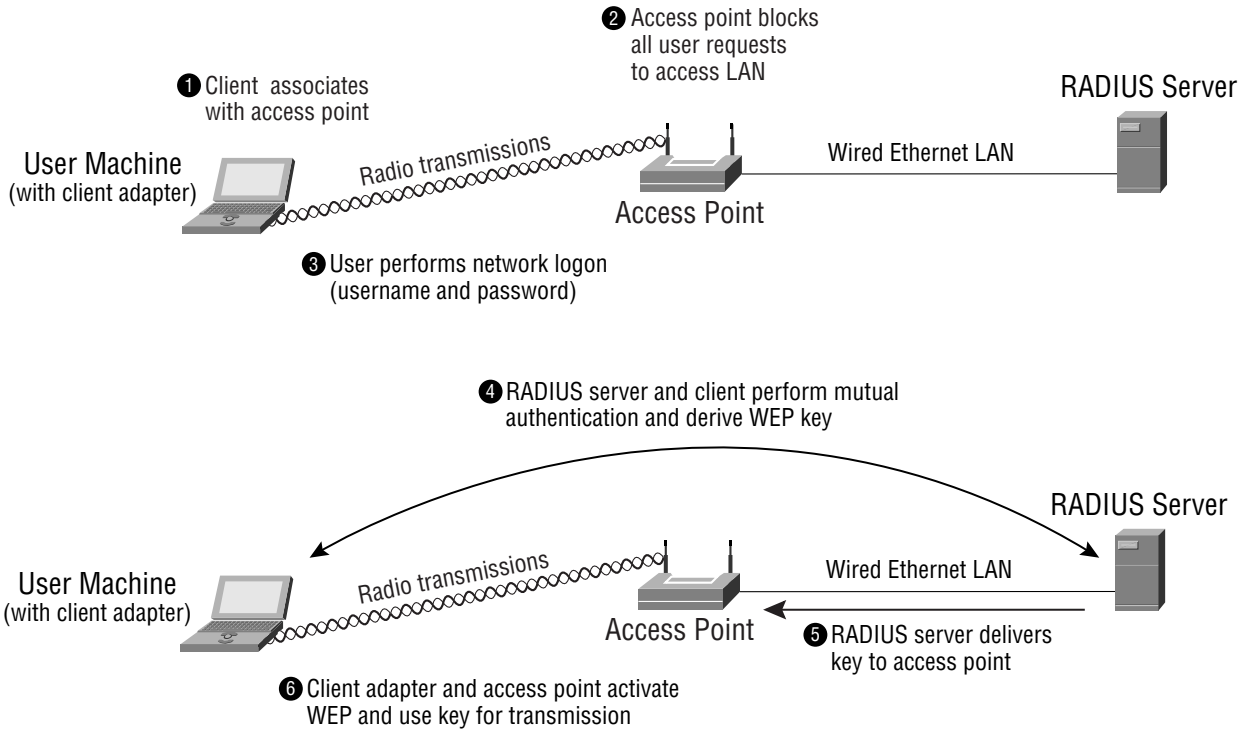


Table 1 Cisco Aironet MPI352 Specifications

Physical	
Form Factor	Mini PCI Type IIIA
Size (W x D x H)	2.006 in. (50.952mm) x 2.346 in. (59.588mm) x.189 in. (4.801mm)
Antenna Connectors	2 ultra miniature SMT U.FL type connectors compatible with Hirose U.FL-R-SMT
Weight	.53 oz, 15 g
Radio	
Frequency	2.400 to 2.500 GHz
Selectable Channels	14 (3 non-overlapping channels)
Wireless Medium	Direct Sequence Spread Spectrum (DSSS)
Media Access Protocol	Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA)
Modulation Technique	• DBPSK @ 1 Mbps • DQPSK @ 2 Mbps • CCK @ 5.5 and 11 Mbps
Data Rates	1, 2, 5.5 and 11 Mbps (auto selecting to extend range)
Available Transmit Power Settings	• 100 mW (20 dBm) • 50 mW (17 dBm) • 30 mW (15 dBm) • 20 mW (13 dBm) • 1 mW (0 dBm)
Diversity	Diversity supported by two antenna connectors.
Delay Spread	• 1 Mbps: 500 ns • 2 Mbps: 400 ns • 5.5 Mbps: 300 ns • 11 Mbps: 140 ns
Power Consumption (Typical; at 100 mW Transmit Power)	• Transmit: 570 ma • Receive: 350 ma • Sleep: 15 ma with PCI clock disabled
Power Management	3 levels of power consumption available, including: • CAM (Constantly Awake Mode) • Fast PSP (Power Save Mode) • Max PSP (Maximum Power Savings)
Performance	
Range (Typical; Communicating with Two dBi Dipole Antennas on AP)	• Indoor: – 130 ft @ 11 Mbps – 320 ft @ 1 Mbps • Outdoor: – 800 ft @ 11 Mbps – 2,000 ft @ 1 Mbps

Table 1 Cisco Aironet MPI352 Specifications (Continued)

Security	
Security Architecture	802.1x security support via EAP and LEAP for the most advanced wireless authentication scheme available
Encryption	Hardware accelerated 40-bit and 128-bit RC4 WEP encryption for data security with negligible performance degradation
General	
Interface	True PCI bus interface utilizing the A504 Cisco MAC (no bridge chip)
Network Architecture Types	Infrastructure and ad hoc (peer-to-peer)
Drivers	• NDIS3 (Windows 95, Windows 95B) • NDIS4 (Windows NT4.0/3.51) • NDIS5 (Windows 2000, Windows 98/98SE, Windows Me, Microsoft XP) • Mac OS 9.x, Linux
End-User Utilities	Aironet Client Utility (ACU)
Compliance	• Standards: – UL 1950; CSA 22.2 No. 950-95; IEC 60950; EN 60950; and EN 50082-1 • Radio Approvals: – FCC Part 15.247; Canada RSS-139-1 & RSS-210; Japan Telec 33B; Europe EN-330.328; FCC Bulletin OET-65C; and Industry RSS-102 • EMI and Susceptibility: – FCC Part 15.107 and 15.109 Class B; ICES-003 Class B (Canada); CISPR 22 Class B; AS/NZS 3548 Class B; VCCI Class B; and EN 301.489 • Other: – IEEE 802.11 and 802.11b – Microsoft WHQL – WECA Wi-Fi

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