



## Features and Benefits

### Integrated AireWave Director™ Software

Create an intelligent RF control plane for self-configuration, self-healing, and self-optimization

### Zero-configuration deployment

The Airespace system is deployed without modifying existing routing and switching infrastructures, and without touching access points

### Multi-layered security

Flexible security policies adapt to changing corporate security needs

### Rogue AP detection, location, and containment

Integrated wireless intrusion protection preserves the integrity of wireless networks and sensitive corporate information

### Seamless mobility management

Inter-subnet roaming without client software facilitates device management; no changes to core routing infrastructure makes roaming easy

### Enterprise reliability

Automated recovery from access point and switch failures maximizes the availability of the wireless network

### Intuitive management interfaces

Better visibility and control of the air space reduces operational costs

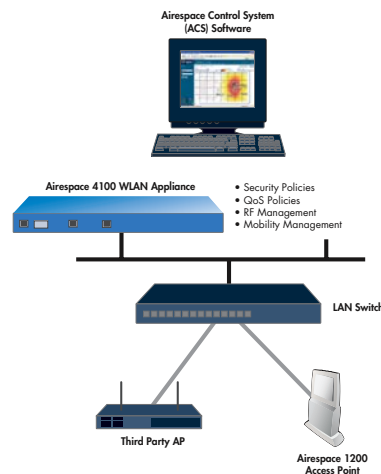
## Airespace 4100 WLAN Appliance

The Airespace 4100 WLAN Appliance delivers Wireless LAN (WLAN) service over an existing Ethernet or IP infrastructure, protecting existing network investments while providing best in class wireless services. As a core component of Airespace's award-winning Wireless Enterprise Platform, the Airespace 4100 delivers wireless security, RF management, intrusion detection, Quality of Service (QoS) and mobility across an entire enterprise. It works in conjunction with Airespace Control System (ACS) Software, Airespace Access Points (APs) and third-party APs to provide network managers with a robust Wireless LAN (WLAN) solution that enables business-critical wireless applications. From voice and data services to location tracking, the Airespace 4100 provides the control, scalability, and reliability that IT managers need to build enterprise-scale wireless networks.

The Airespace 4100 comes in two models – the Airespace 4101, which provides a single Gigabit Ethernet uplink for high speed connectivity to existing wire-line devices, and the Airespace 4102, which provides two Gigabit Ethernet interfaces for redundancy.

### Application – Creating an RF Overlay Network

When deploying a WLAN using the Airespace 4100, access points are directly connected to an existing LAN infrastructure, such as a Layer 3 switch. These access points automatically connect to an Airespace 4100 using the Lightweight Access Point Protocol (LWAPP), an emerging Internet Engineering Task Force (IETF) standard. All traffic from the access points is tunneled to an appropriate Airespace 4100, which provides mobility, security, and RF management across an entire enterprise. By delivering RF services as an overlay on top of existing LAN infrastructures, the Airespace 4100 ensures seamless integration into any enterprise environment. There is no need to make any changes to the existing routed or WAN infrastructure.



Specific intelligent RF capabilities within the Airespace 4100 WLAN system include:

- Dynamic channel assignment – 802.11 channels are adjusted to optimize network coverage and performance based on changing RF conditions.
- Interference detection and avoidance – The Airespace 4100 detects interference and recalibrates the network to avoid performance problems.
- Load balancing – The Airespace system provides automatic load balancing of users across multiple APs for optimum network performance, even under heavy load.
- Coverage hole detection and correction – AireWave Director Software detects coverage holes and attempts to correct them by adjusting the power output of APs.
- Dynamic power control – The Airespace 4100 dynamically adjusts the power output of individual APs to accommodate changing network conditions. This ensures predictable wireless performance and availability

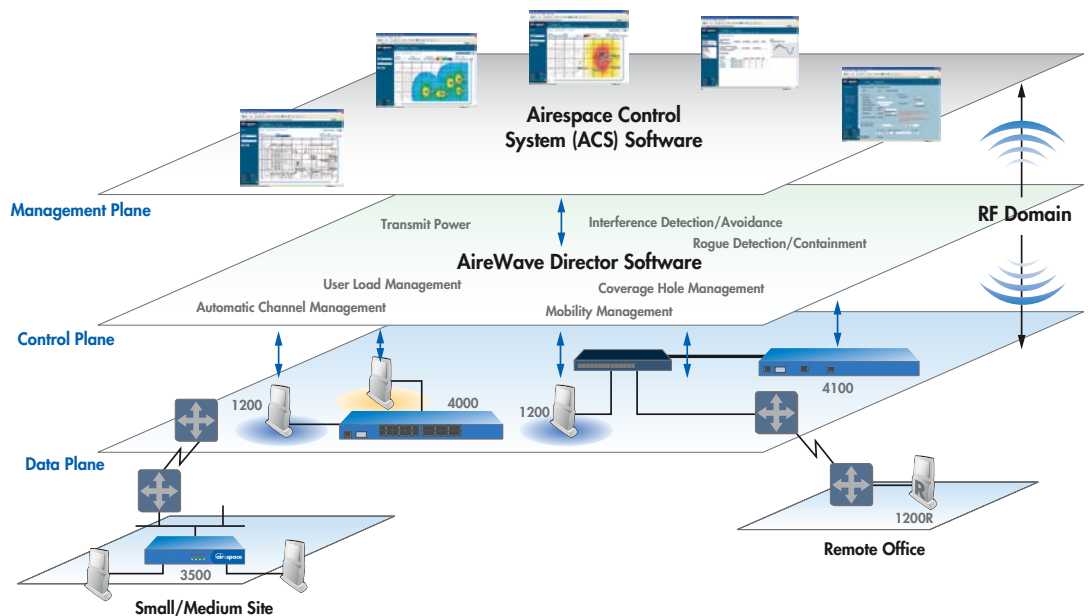
## Intelligent RF Management

AireWave Director Software, the industry's only solution for adaptive real-time RF management, comes embedded on all Airespace hardware, including the Airespace 4100. AireWave Director Software uses patent-pending algorithms that detect and adapt to changes in the air space in real-time. These adjustments create the optimal topology for wireless networking in much the same way that routing protocols compute the best possible topology for IP networks.

## Air-tight Security

As wireless security is a chief concern of IT managers, Airespace designed the Airespace 4100 to adhere to the strictest level of security standards, including HIPAA and FIPS. The Airespace 4100 is the first product of its kind to receive FIPS 140-2 level 2 certification, making it the ideal platform for government and military installations.

The Airespace 4100 supports a wide variety of industry security standards, including IPsec VPNs with DES, 3DES and AES CBC, L2TP tunneling, 802.1X with multiple EAP types (includes PEAP, TLS, TTLS), WEP, WPA, and 802.11i (WPA2). The Airespace WLAN system was designed to provide complete protection from all RF-related security issues. As a result, it provides the industry's best WLAN security, including rogue detection/location/containment, mobile VPNs, interference avoidance, user exclusion, attack signature detection, protection from RF eavesdropping, location-based access control, and coverage area optimization.



# Airspace 4100 WLAN Appliance

## Real-time Application Support

The Airspace WLAN system provides best-in-class performance to support real-time applications, such as voice. The Airspace 4100 enables rapid handoff between APs and between multiple switches, providing seamless mobility with no interruption in service to the client. Intelligent queuing and contention management schemes provide effective resource management of the air space. In addition, the Airspace 4100 supports Proactive Key Caching for real-time performance and seamless mobility when using 802.11i. Airspace also supports QoS capabilities that are WMM compliant and closely mirror the emerging IEEE 802.11e standard. Full compliance with the finished standard will be achieved via a software upgrade when the final standard is ratified.

## Seamless Mobility

The Airspace 4100 allows users to seamlessly roam between access points, across switches, and even across routed subnets. Security and QoS context information follows users wherever they roam, ensuring that mobility does not compromise performance, reliability, or privacy. The Airspace 4100 does not require any modifications to existing infrastructures or client devices to enable mobility (e.g., Mobile IP). As a result, the Airspace wireless system is easy to deploy, and cost-effective to own and operate.

## Enterprise Reliability

In the event of an access point failure, the Airspace 4100 automatically adjusts power on adjacent access points to cover the area where the failed access point provided service. In the event of an individual appliance failure, access points automatically find a backup WLAN appliance to ensure that wireless service remains available. Airspace 4100 WLAN Appliances can be deployed in an N+1 redundant topology, allowing enterprises to scale their wireless networks with peace of mind that they are protected from both hardware and software disruptions. Only the Airspace WLAN system allows users to control wireless deployment costs without sacrificing reliability.

## The Standard for Wireless LANs

Airspace has revolutionized the wireless space by bringing simplicity to day-to-day wireless network operations. This includes automated tools for RF deployment and optimization, fault tolerance, comprehensive policy management for seamless network mobility, and an end-to-end framework for enterprise-wide security.

The Airspace 4100 enables enterprises with existing Ethernet infrastructures to seamlessly and cost-effectively introduce intelligent RF capabilities into their network environment. By providing a secure and reliable platform for wireless operations, the Airspace 4100 is a key cornerstone of the Airspace Wireless Enterprise Platform.

Some additional highlights of the security features contained within the Airspace 4100 WLAN Appliance include:

- VPN termination – An optional on-board security module supports IPsec encryption at rates up to two million packets per second.
- Identity-based security policies – IT managers have granular control over how users can use the wireless network and where they can roam.
- Rogue AP detection, location and suppression – The Airspace system detects rogue access points and allows IT managers to locate them and prevent users from associating with them.
- Airspace Intrusion Protection – It combines real-time RF monitoring along with advanced signature analysis to deliver comprehensive 24/7 wireless protection.
- Network Access Control (NAC) – The Airspace system has built-in client integrity checking and applications to ensure updated anti-virus software, OS patch updates and VPN software before WLAN access is granted.
- Secure mobility – The Airspace WLAN system enables security policies to follow users as they roam throughout an enterprise.
- Secure out of the box – As with all Airspace solutions, the Airspace 4100 WLAN Appliance series ships with built-in X.509 certificates. This ensures that the system is completely secure from the moment it is turned on.

# Airespace 4100 WLAN Appliance

## Specifications

### Protocols and Standards

#### Wireless

IEEE 802.11a, 802.11b, 802.11g

#### Wireline/Switching

IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX, IEEE 802.3z 1000Base-X, IEEE 802.3x flow control, IEEE 802.1Q VLAN Tagging, IEEE 802.1D spanning tree protocol, IEEE 802.3af

#### 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 Alliance 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 2401 Security Architecture for the Internet Protocol, RFC 2403 HMAC-MD5-96 within ESP and AH, RFC 2404 HMAC-SHA-1-96 within ESP and AH, RFC 2405 ESP DES-CBC Cipher Algorithm With Explicit IV, RFC 2406 IPSEC, RFC 2407 Interpretation for ISAKMP, RFC 2408 ISAKMP, RFC 2409 IKE, RFC 2451 ESP CBC-Mode Cipher Algorithms, RFC 2510 X.509 PKI Certificate Management Protocols, RFC 2511 X.509 Certificate Request Message Format, RFC 2560 X.509 Internet PKI Online Certificate Status Protocol, RFC 2661 L2TP, 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), SSL and TLS: RC4 128-bit and RSA 1024-bit and 2048-bit, AES: CCM, CCMP

#### Authentication, Authorization, and Accounting

IEEE 802.1X, RFC 2548 Microsoft Vendor-Specific RADIUS Attributes, RFC 2716 PPP EAP TLS Authentication Protocol, 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 1493 Bridge MIB, 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 SNMP v3, RFC 3418 MIB for SNMP, RFC 3636 Definitions of Managed Objects for IEEE 802.3 MAUs, Airespace private MIBs

#### Management Interfaces

Web-based: HTTP/HTTPS

Command Line Interface: Telnet, SSH, serial port

#### Interfaces and Indicators

Uplink: 1 (AS4101) or 2 (AS4102) 1000Base-SX (LC Female - In Use, Link)

Management Port: 10/100 Mbps Ethernet (RJ45 - link, activity)

Console Port: RS232 (DB-9 male, DTE interface)

Other Indicators: Status, 1000Base-X Activity, Alarm

#### Physical and Environmental

Dimensions (WxDxH): 17.4 x 12.8 x 1.75 in.

(442 x 326 x 44.5 mm)

Weight: 12.5 lbs (5.7 kg)

Temperature:

- Operating: 32 to 104°F (0 to 40°C)
- Storage: -13 to 158°F (-25 to 70°C)

Humidity:

- Operating humidity: 10 - 95%, non-condensing
- Storage humidity: up to 95%

Input power: 100 - 240 VAC; 50/60 Hz; 0.5 A at 110 VAC, 0.2 A at 220 VAC; 50W

#### Compliance

Safety

- UL 60950-1:2003
- EN 60950:2000

EMI and Susceptibility (Class A)

- US: FCC Part 15.107 and 15.109
- Canada: ICES-003
- Japan: VCCI
- Europe: EN 55022, EN 55024

Security

- FIPS 140-2 level 2
- HIPAA



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