# 3Com® Wireless LAN Managed Access Point 3950

DATA SHEET

## High-Performance and Scalable 11n Dual-Radio Managed Access Point with Local Switching

## OVERVIEW

The 3Com® Wireless LAN Managed Access Point (MAP) 3950 is a high-performance IEEE 802.11n full 3x3 Multiple-Input Multiple-Output (MIMO) dual-radio managed access point delivering secure, reliable voice-ready connectivity.

An integral component of the 3Com Wireless LAN Mobility System, the 3Com MAP 3950 with intelligent switching offers both centralized and distributed data forwarding, automatically determining the best alternative based on the requirements of the underlying application. This allows it to support the most demanding wireless applications indoors and outdoors, including Voice over Wi-Fi® and video distribution.

Managed by a WLAN switch or controller with which it securely communicates, the MAP contains no local data store for sensitive data, eliminating the chance of information being compromised due to hacking or theft. The end result helps reduce capital expenses and ongoing administrative costs—all while keeping the wireless LAN secure.

The MAP 3950 is backwards compatible with legacy IEEE 802.11 a/b/g clients providing investment protection without the need for an additional overlay network.

## KEY BENEFITS

### MAXIMUM WIRELESS COVERAGE AND RANGE

The MAP 3950 contains 2.4 GHz and 5 GHz radios that operate simultaneously, each featuring three radio transmit and three receive chains. This 3x3 MIMO configuration provides increased range and performance over implementations that utilize the standard 2x2 or advanced 2x3 MIMO solutions.

The internal optimized gain pattern RF antennas help ensure the outstanding coverage and range enhancements promised by 802.11n technologies even in mixed-client mode environments.

### MAXIMIZE CONNECTIVITY AND ENVIRONMENT FLEXIBILITY

Part of the 3Com Wireless LAN Mobility System, the MAP 3950 provides "always-on" reliability. If any 3Com wireless controller or wireless switch fails in the domain, failover to another controller or switch is seamless and client connections are maintained. Data flow continues without any service disruptions to voice and real-time video applications.

Two 10/100/1000 autosensing Ethernet ports provide redundant network connections and Power over Ethernet (PoE) sources, helping ensure optimal WLAN uptime.

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## KEY BENEFITS (CONTINUED)

PoE options fit customer needs in many deployment scenarios. The 3Com MAP 3950 uses standard 802.3af and non-standard 802.3af+ (802.3at draft) midspan PoE injectors and PoE switches.

### OPTIMIZED 11N PERFORMANCE IN DENSE NETWORK ENVIRONMENTS

To optimize available bandwidth, the MAP 3950 features automatic client steering to help deliver maximum IEEE 802.11n performance. Since 802.11n technology operates in both the 2.4 GHz and 5GHz bands, client steering automatically directs capable clients to the less crowded 5 GHz band without any client intervention or configuration changes. The MAP 3950 also enables granular bandwidth management and load balancing features that vastly improve network performance and end user experience.

### VOICE-READY WIRELESS CONNECTIVITY

Distributed forwarding optimizes traffic flow, reducing latency, while providing ultra high performance and massive scalability. Data integrity and RF signal strength of the wireless channel are continually recalculated, tuning for optimal RF channel and transmit power, while enforcing the prioritization of delay-sensitive voice and other critical applications.

Wi-Fi Multimedia (WMM®) or SpectraLink Voice Priority (SVP) helps ensure optimal QoS for voice traffic. Policies provide per user, protocol, or class-of-service (CoS) mapping, while enhanced features such as Call Admission Control can finely tune deployment of Voice over Wireless.

### SECURE AND SEAMLESS ROAMING

Local traffic encryption distributes the encryption processing across the network rather than relying on one central device. Continuous, on-demand or scheduled RF scans can be used to locate users and identify and isolate potentially harmful rogue APs or other vulnerabilities.

3Com wireless switches and controllers integrate with backend Authorization/Authentication/Accounting (AAA) servers, consistently enforcing user and group access policies across the wireless LAN to provide secure session integrity as users roam throughout the network without the need for re-association or IT intervention.

The MAP 3950 also supports location-based service applications that rely on Wi-Fi signal information for position location; common usages include asset tracking or client location.

### FLEXIBLE EXTENDED WIRELESS NETWORK

In addition to traditional access point functionality, the MAP 3950 can also serve as an IEEE 802.11s mesh AP, mesh point, mesh portal, or WDS bridge to other MAP 3950s, extending the reach of enterprise WLANs. The MAP supports this in either point-to-point or point-to-multipoint topologies, allowing maximum flexibility within a mesh or bridged environment.

The MAP 3950 can be configured with one radio for client services and the other for mesh service. The MAP can also be used in a dedicated bridging mode, to provide seamless connectivity between buildings without the expense of laying new cable.

### SIMPLIFIED CONFIGURATION, CONTROL AND OPTIMIZATION

With remote management, the arduous process of initially configuring and deploying access points (APs) is vastly simplified because configuration settings are centrally distributed for consistency and accuracy. And for easier long-term management, any added MAPs inherit configuration settings from its wireless switch or controller.

Automated network controls at the wireless switch improve coverage and service by optimizing RF gain, assigning radio channels, balancing traffic loads and monitoring the RF environment of all managed access points with which it is associated.

### INVESTMENT PROTECTION WITH FORWARD AND BACKWARDS COMPATIBILITY

The 3Com Managed Access Point 3950 is fully compliant with the IEEE 802.11n Draft 2.0 standard, software-upgradable to keep pace with evolving standards. This MAP has been extensively tested with new 802.11n and legacy 802.11a/b/g clients for interoperability, and supports all relative encryption schemes with dedicated hardware to ensure line-rate encrypted data traffic.

Fully compatible with all generations of the 3Com Wireless LAN Mobility System, the MAP 3950 can be deployed without any hardware upgrades to existing switches or controllers.

## FEATURES

### CONVERGENCE-OPTIMIZED WIRELESS NETWORKING

**Distributed forwarding›** Optimize traffic flow, reducing latency and improving performance.

**IEEE 802.11i PMK cached roaming›** For real-time applications like voice, security credentials do not need complete reauthentication when roaming between access points, reducing dropped voice sessions.

**Session-based bandwidth reservation›** Voice QoS can be assured with IEEE 802.11e TSPEC Call Admissions Control (CAC).

**Wi-Fi Multimedia (WMM)›** WMM grants preference to high-priority traffic like voice.

**Neighbor Report advertisement›** Load balancing using IEEE 802.11k directs traffic to a neighbor AP that has a lighter load or offers enhanced services.

**Queuing›** Determine which user or session needs traffic priority with priority queuing.

### SECURITY

**Strong, multiple encryption›** IEEE 802.11i WPA2™ Advanced Encryption Standard (AES), WPA™ dynamic Temporal Key Integrity Protocol (TKIP) and Wi-Fi Equivalent Privacy (WEP) packet encryption help ensure strong data security.

**Virtual private group support›** Administrators can independently encrypt and isolate subnets or VLANs using the same SSID; up to 32 different SSIDs per radio can be configured

**Intrusion Detection and Protection›** Multi-band sweeps scan the RF environment, searching for rogue access points, denial-of-service (DoS) attacks, ad-hoc users and sources of RF interference and takes action to mitigate the intrusion.

**Theft- and hacker-safe›** No local data store of sensitive network data; if a MAP is stolen, no secure information goes with it. Integrated Kensington security lock helps deter theft and other unauthorized device removal.

### INSTALLATION EASE AND FLEXIBILITY

**Simple installation›** No pre-staging or pre-configuration is required for new MAPs; replacement MAPs inherit configuration information from its WLAN switch or controller.

**Flexible deployment topologies›** MAP can directly or remotely connect to its WLAN switch or controller, offering a wide variety of flexible deployment scenarios.

**PoE support›** Power is supplied by a 3Com wireless switch, or through any other 802.11af-compliant device or any 802.3af+ (pre-standard 802.3at) device over standard Cat5 cabling, eliminating the need for power adapters, power cords, or AC outlets.

**All client operation›** The MAP 3950 supports IEEE 802.11a, .11b, .11g and .11n simultaneously for user flexibility.

**3x3 MIMO›** The MAP 3950 supports 3 transmit and 3 receive chains with two spatial streams, making it an ideal configuration for typical WLAN environments and providing a great cost/performance advantage over 2x2 and 2x3 MIMO solutions.

**Re-use mounting hardware›** The MAP 3950 snaps onto existing 3Com MAP 3850/3750 mounting brackets.

### SCALABILITY AND RESILIENCY

**Scales to hundreds of users›** Supports up to 500 simultaneous clients.

**Intelligent switching›** Enables distributed forwarding of user traffic through the MAP.

**PoE and data port redundancy›** If the MAP loses either the LAN or PoE connection on either port, it will automatically failover to the other port, increasing network uptime.

**Always-on networking›** Ubiquitous communications between 3Com wireless LAN switches and controllers in a Mobility Domain with clustering allows automatic 3Com MAP load balancing, zero downtime and hitless network upgrades.

**Client load balancing›** Band steering seamlessly moves 5 GHz-capable clients to the higher capacity 5 GHz band.

### COMPREHENSIVE MANAGEMENT AND CONTROL

**Automated transmit power and radio channel assignment›** Transmit power settings and radio channel assignments can be set to optimize the RF cell size and to support international requirements.

**Remote management›** Channel number, power level, SSIDs and security settings are all handled by the wireless LAN switch or controller for additional security; MAPs are not operational in stand-alone mode.

# SPECIFICATIONS

### SYSTEM REQUIREMENTS
A 3Com Wireless LAN Controller or Switch—Wireless LAN Controller WX4400 or WX2200, Wireless LAN Switch WX1200, or WXR100 Remote Office Wireless LAN Switch—is required for MAP operation; 3Com Wireless LAN Switch Manager recommended for MAP management

### TOTAL PORTS
2 10BASE-T/100BASE-TX/1000BASE-T IEEE 802.3af and 802.3af+ (pre-standard 802.3at) compatible PoE ports with auto-negotiation

### MEDIA INTERFACES
RJ-45; IEEE 802.11a, 802.11b, 802.11g, 802.11n Draft 2.0

### DATA RATES
**IEEE 802.11n:** Modulation Coding Scheme MCS 0–MCS 15 (6.5–300 Mbps)

**IEEE 802.11a/g:** 54, 48, 36, 24, 18, 12, 9, 6 Mbps; Orthogonal Frequency Division Multiplexing (OFDM), with automatic fallback

**IEEE 802.11b:** 11, 5.5, 2, 1 Mbps; Direct-Sequence Spread Spectrum (DSSS), with automatic fallback

### FREQUENCY BAND
IEEE 802.11n: 2.4-2.484 GHz and 5.15-5.85 GHz

IEEE 802.11a: 5.15-5.85 GHz

IEEE 802.11b/g: 2.4-2.484 GHz

### MEDIA ACCESS PROTOCOL
CSMA/CA

### OPERATING CHANNELS
Channel availability depends on local country regulations. Wireless LAN system administrator must choose correct country of operation. Channels are then automatically configured to comply with specified country's regulations.

### RADIO
Dual 802.11a/n (5 GHz) and 802.11b/g/n (2.4 GHz), concurrent operation

### ANTENNAS
Three internal 4.5 dBi (integrated) 2.4-2.48 GHz and three internal 3 dBi 5.15-5.825 GHz, RF-optimized spherical coverage antennas for full 3x3 MIMO

### TRANSMIT POWER SETTINGS
Based on regulatory domain (country of operation), up to 19 dBm in 2.4 GHz, and up to 18 dBm in 5 GHz

### POWER OPTIONS
Auto-selecting: standard IEEE 802.3af for 2x3 mode, dual 802.3af for full 3x3 mode, and 802.3af+(pre-at) for full 3x3 mode

### SECURITY
Hardware-based line-rate encryption

Static and Dynamic WEP 40-/64- and 104-/128-bit encryption with per session rotating keys

WPA (TKIP) and WPA2 (AES)

64 SSIDs support at the MAP

Access Control Lists (ACLs) and VLAN support at the wireless switch/ controller

Kensington Security Slot

### LEDS
Power, Radio 1 and Radio 2, indicating activity and health

### STANDARDS CONFORMANCE
**IEEE:** 802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11k (draft), 802.11n draft 2.0, 802.1X, 802.3ab, 802.3af, 802.3af+ (draft 802.3at), 802.3i, 802.3u

**Wi-Fi Alliance:** WPA, WPA2, WMM, WMM-PS, Wi-FI CERTIFIED for 802.11n,a,b and g

**IETF:** CAPWAPWG Taxonomy and Architecture Compatibility

### REGULATORY/AGENCY APPROVALS
**Safety**

UL 60950-1, 1st Edition

CAN/CSA C22-2 No. 60950-1-03

CB Scheme to IEC 60950-1, 1st Edition

EN 60950-1, 1st Edition

EU Low Voltage Directive 20023/95/EC

**Environmental**

WEEE: EU Directive 2002/96/EC

ROHS: EU Directive 2002/95/EC

EN 60601-1-2 (2001): EU Medical Directive

**Radio**

USA: 47CFR (FCC) Part 15.407

Canada: IC RSS-210, Issue 6

EU: ETSI EN301 893, EN301 489-1 and -17

Japan: TELEC ARIB STD-70 (per new W52/W53 requirements)

**Other**

EU EMC: Directive 89/336/EC

ROHS: EU Directive 1999/5/EC

FCC Part 15, Class B

IECS-003, Class B

### DIMENSIONS AND WEIGHT
Diameter: 20.6 cm (8.11 in)

Depth: 8.2 cm (3.23 in)

Weight: 733 g (25.76 oz)

### ENVIRONMENTAL RANGES
Operating temperature: 0 to 50°C (32 to 122°F)

Storage temperature: -25 to 70°C (-4 to 158°F)

Humidity: 10 to 95% non-condensing

### PACKAGE CONTENTS
3Com managed WLAN access point

Mounting hardware

Quick Start guide

Warranty booklet

### WARRANTY AND OTHER SERVICES
Limited Hardware Warranty for one year. 90 days free technical support.

Refer to www.3com.com/warranty for details.

# ORDERING INFORMATION

| PRODUCT DESCRIPTION | 3COM SKU |
|---|---|
| 3Com Wireless LAN Managed Access Point 3950 | 3CRWX395075A |
| **Wireless LAN Managed Access Point Options** | |
| 3Com 802.3af Gigabit PoE Injector | 3CNJPSE-GIG |
| **Wireless LAN Controller, Switches and Software**[1] | |
| 3Com Wireless LAN Controller WX4400 | 3CRWX440095A |
| 3Com Wireless LAN Controller WX2200 | 3CRWX220095A |
| 3Com Wireless LAN Switch WX1200 | 3CRWX120695A |
| 3Com WXR100 Remote Office Wireless LAN Switch | 3CRWXR10095A |
| 3Com Wireless LAN Switch Manager | 3CWXM10A |
| **3Com Global Services** | |
| 3Com Wireless LAN Site Survey, Network Health Check, Installation Services and Express℠ Maintenance | www.3com.com/services_quote |
| 3Com University Courses | www.3com.com/3comu |

1 WLAN Controller or WLAN Switch required for management of access point.

**Visit www.3com.com for more information about 3Com secure converged network solutions.**

3Com Corporation, Corporate Headquarters, 350 Campus Drive, Marlborough, MA 01752-3064
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