



The Intelligent Wireless Networking Choice™

## InMotion™ 3000 Series MultiService Controllers



**in motion™**

### Key Features:

- Creates easy-to-use Public/Guest Internet Access (hotspot) services
- “Zero configuration” service interface adapts to even the most demanding client device configuration settings
- Bandwidth management creates multiple service tiers and ensures fair access to bandwidth for users
- Secure user authentication, authorization and accounting (AAA) function enables wide range of free or fee-based service models
- Complete IP routing and networking services enables direct connection to the Internet
- Concurrent Universal Access Method (HTML login) and 802.1x login support facilitates migration to Wi-Fi security
- Interfaces for centralized AAA, captive portal and billing functions enables large multi-location networks
- Integrated MultiService Access Point provides turnkey “hotspot in a box” for small venues
- Downstream Ethernet port connects additional MAPs for expanded RF coverage

### Overview

InMotion™ MultiService Controllers (MSC) are the central nervous system in the Colubris Intelligent MultiService System, controlling the operation of intelligent access points distributed throughout a wireless zone, building or campus. The InMotion MSC 3000 Series deliver Colubris’ Public/Guest Internet Access service to client devices throughout a wired or wireless LAN infrastructure.

The InMotion MSC creates Virtual Service Communities—discrete groups of network users with assigned service policies. A Public/Guest Internet Access VSC provides users a high-performance Internet access service with rich service features. It is configurable to support fee-based service provider applications, or popular guest networking applications in an enterprise. Once installed, InMotion MSCs can be easily upgraded via software to take advantage of new Colubris multiservice software that enhances mobility and creates new services.

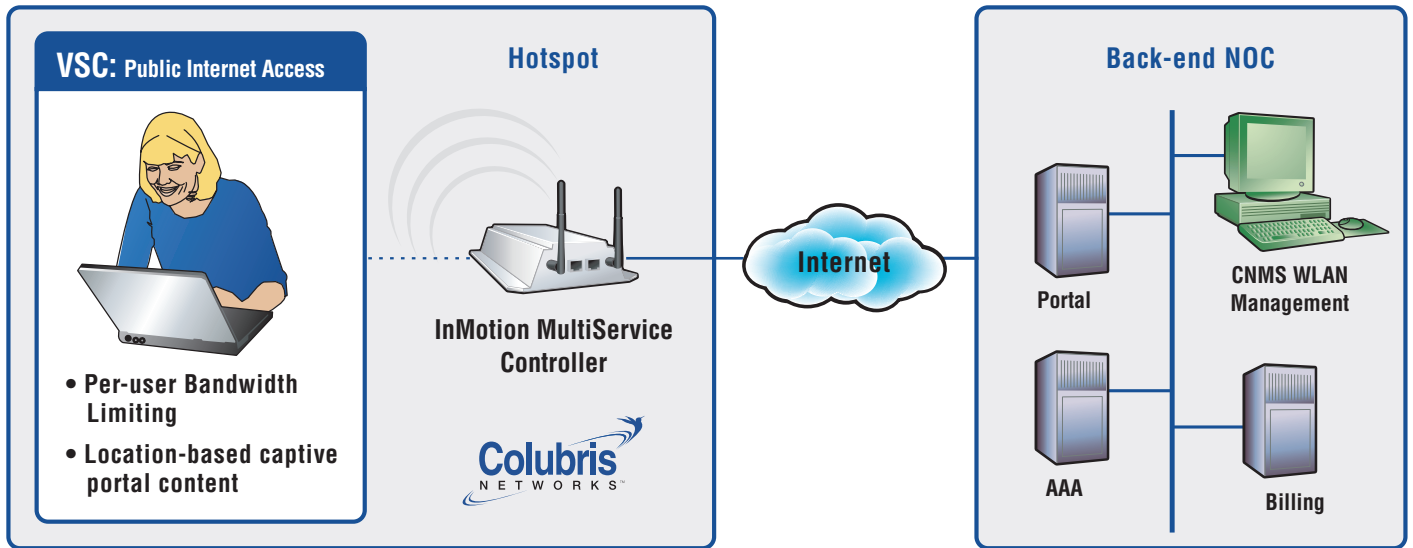
The InMotion MSC 3000 Series integrates a full-featured multiservice access point and service controller in a single turnkey unit ideally suited for a small to moderate sized venue. It provides the same award-winning Public/Guest Internet Access service offered in the InMotion 5000 Series, enabling a single architecture to be deployed across public and private venues of any size. Customers can easily expand RF coverage in larger venues by daisy-chaining InReach 320/330 access points using the convenient downstream Ethernet port.

### Public/Guest Internet Access Service

The Public/Guest Internet Access service provides convenient Internet access with ironclad security and high performance. Designed to deliver the best possible user experience, its features include Colubris’ Zero Configuration Service Interface, which adapts to any client device’s IP address and web proxy settings, plus a customizable web login screen for easy sign-on. To ensure seamless support for the applications demanded by business travelers and consumers, the Public/Guest Internet Access service features Colubris’ advanced IP networking capabilities, including Adaptive NAT™, SMTP redirect and DHCP services. They provide transparent support for demanding applications, such as corporate VPN, email, and online games.

For maximum security, the service simultaneously supports multiple authentication methods, including universal authentication mechanism (SSL protected web login) and the 802.1x protocol. This ensures a smooth migration path to WPA2 Wi-Fi security to protect the privacy of user traffic and minimize the risk of network intrusions. The authentication capabilities support a range of service models, from user name/password and single-use authorization codes to promotional scratch cards, credit card and SMS billing.

## InMotion 3000 Series Creates Turnkey Public/Guest Internet Service



The MSC with Public/Guest Internet Access service software interfaces with a remote network operations center (NOC) to authenticate hotspot users, redirect web browsers to a captive portal, collect billing statistics and enforce customizable service policies.

The Public/Guest Internet Access service can also make an external walled garden accessible to users, providing protected access to special content, from employment application forms, phone directories, and product catalogs in enterprise applications, to promotions and advertisements in hotspot services.

A rich feature set allows service providers to create a centrally managed hotspot network. A standards-based RADIUS interface provides access to a remote authentication, authorization and accounting (AAA) system. InMotion MSCs collect activity statistics to support per-user billing by data volume and elapsed session time. Alternatively, operators can outsource these functions using the MSC's integrated support for leading third-party hotspot billing services. The MSC also integrates seamlessly into a facilities-based network, enabling carriers and PTTs to add hotspot services to their suite of broadband service offerings.

Colubris customers can also create sophisticated wholesale and location-based hotspot services using the Public/Guest Internet Access service. The system works with Colubris InReach Multiservice Access Points (MAP) to support multiple Virtual Service Communities, each of which is assigned a privately-branded SSID. Traffic from each Virtual Service Community is segmented and directed to separate captive portals, AAA servers, and billing systems. Bandwidth can be allocated per Virtual Service Community and per user using the MSC's bandwidth management features. The system can also use location identifiers sent by each InReach MAP to customize service by physical location within a venue, such as by building, floor, or room.

With InMotion MSCs, enterprises have the assurance of knowing they can provide Internet access to guests without compromising the security and performance of other applications. All traffic can be mapped to a specific VLAN or GRE tunnel, limiting access to specific network resources. At the same time QoS policies can eliminate competition for limited

WLAN bandwidth between the guest and internal services that are sharing the network.

### Industry-leading Intelligent Access Point

An embedded multiservice access point delivers multiple WLAN services to 802.11 standard client devices, including Public/Guest Internet Access, and creates Virtual Service Communities. The embedded access point enhances WLAN performance and safeguards network traffic by enforcing security and QoS policies at the boundary between WLANs and wired networks. It applies policies that are centrally defined for each VSC, enabling a single InMotion 3000 Series to deliver any combination of public or private network services. Access point management is integrated with the 3000 Series, enabling all features to be centrally managed using the InCharge Colubris Network Management System (CNMS) or an SNMP-based management system.

The InMotion MSC Product Family				
Features	MSC-3200	MSC-3200R	MSC-3300	MSC-3300R
Public/Guest Internet Access Users	100	100	100	100
Integrated 802.11 AP	✓	✓	✓	✓
802.11 a/b/g Radios	1	1	2	2
Enclosure	Plenum rated indoor	Outdoor	Plenum rated indoor	Outdoor

For complete operational flexibility, each radio is configurable for three operating modes: infrastructure (access point), wireless distribution system (wireless backhaul), and security monitor. Dual radio models enable network designers to configure a single MSC to backhaul traffic and provide service coverage without compromising network performance.

The access point ensures consistent client coverage by automatically adjusting its RF configuration whenever it detects local sources of interference, and a self-healing feature automatically adjusts to changes in the RF environment.

## Management

The InMotion MSC product family is designed for secure remote management to keep operating costs low. They are fully manageable by Colubris' powerful, standalone InCharge Colubris Network Management System (CNMS). With InCharge CNMS, organizations can centralize management for an entire network of InMotion MSCs and InReach MAPs. As a result, configuration changes and software updates can be made with just a few mouse clicks. The MSCs also feature an onboard web management interface which provides easy configuration with the security of SSL encryption. An embedded VPN client secures all SNMP management traffic, and secure FTP protocols protect downloadable firmware and configuration files.

Product Specifications				
Model Number	MSC-3200 MultiService Controller and Integrated AP	MSC-3300 MultiService Controller and Integrated Dual Radio AP	MSC-3200R Outdoor MultiService Controller and Integrated AP	MSC-3300R Outdoor MultiService Controller and Integrated Dual Radio AP
802.11 Radio(s)	Single a/b/g selectable	Dual a/b/g + a/b/g, independently selectable	Single a/b/g selectable	Dual a/b/g + a/b/g, independently selectable
Network Ports	(2) RJ-45, auto-sensing 802.3 10/100 BASE-T Ethernet. Supports daisy chaining	(2) RJ-45, auto-sensing 802.3 10/100 BASE-T Ethernet. Supports daisy chaining	(1) Waterproof RJ-45, Auto-sensing 802.3 10/100 BASE-T Ethernet(includes male and female)	(1) Waterproof RJ-45, Auto-sensing 802.3 10/100 BASE-T Ethernet(includes male and female)
Reserved Serial Port	(1) RJ-11	(1) RJ-11		
Status LEDs	WLAN and LAN activity, power indicators	WLAN and LAN activity, power indicators		
Antenna Connectors	(2) Reverse polarity male SMA with diversity	(4) Reverse polarity male SMA with diversity	(2) Waterproof reverse polarity N male with diversity	(2) Waterproof reverse polarity N male (one per radio)
Antenna	(2) 2 dBi dual band 2.4/5 GHz omni-directional	(4) 2 dBi dual band 2.4/5 GHz omni-directional	(2) 5.5 dBi 2.4GHz omni directional	(2) 5.5 dBi 2.4GHz omni directional
Power Inputs	5 VDC Connector (power supply sold separately), or RJ-45 Power over Ethernet, 802.3af compliant	5 VDC Connector (power supply sold separately), or RJ-45 Power over Ethernet, 802.3af compliant	RJ45 Power over Ethernet, 802.3af compliant (power injector sold separately)	RJ45 Power over Ethernet, 802.3af compliant (power injector sold separately)
Power Requirements	6.5 Watts, max	8.6 Watts, max.	6.5 Watts, max.	8.6 Watts, max
Temperature Range	Operating: 0° to 50°C Storage: -40° to 80°C	Operating: 0° to 45°C Storage: -40° to 80°C	Operating: -20°C to +50°C Storage: -40°C to 80°C	Operating: -20°C to +50°C Storage: -40°C to 80°C
Humidity	5% to 95% typical (non-condensing)	5% to 95% typical (non-condensing)	5% to 95% typical (non-condensing)	5% to 95% typical (non-condensing)
Enclosure	Metal, plenum-rated	Metal, plenum-rated	Die cast aluminum with 3-point silicone rubber gasket, includes pole-top U-bolts and wall mounting brackets. Compliant with IP65 and EN61373	Die cast aluminum with 3-point silicone rubber gasket, includes pole-top U-bolts and wall mounting brackets. Compliant with IP65 and EN61373
Safety Compliance	IEC 60950, UL 1950 and 2043, CSA 22.2 No. 950-95, EN 60950	IEC 60950, UL 1950 and 2043, CSA 22.2 No. 950-95, EN 60950	UL 1950, CSA 22.2 No. 950-95, EN 60950	UL 1950, CSA 22.2 No. 950-95, EN 60950
Overall Physical Dimensions	H: 47.752 mm (1.880 in); L: 165.735 mm (6.525 in); W: 162.560 mm (6.400 in)	H: 47.752 mm (1.880 in); L: 165.735 mm (6.525 in); W: 162.560 mm (6.400 in)	H: 46 mm (1.811 in); L: 180mm (7.087 in); W: 125mm (4.921 in);	H: 46 mm (1.811 in); L: 180mm (7.087 in); W: 125mm (4.921 in);
Shipping Weight	1.4 Kg (3.0 lbs)	1.4 Kg (3.0 lbs)	4.08 Kg, (9.0 lbs)	4.08 Kg, (9.0 lbs)

Network Specifications	
Networking	Bridging and routing: Generic Route Encapsulation (RFC 2784); IEEE 802.1d compliant bridging; RIP v1 (RFC 1058) and v2 (RFC 1723)
	DNS Relay; SMTP Redirection; Stateful Firewall
	Address Management: NAT (RFC 1631); Colubris Networks Adaptive NAT™; CIDR (RFC 1519)
	DHCP: Server (RFC 2131); Client; Relay, Option 82 (RFC 3046)
Client Access Control and Security Functions	Other: RADIUS Client (RFC 2865 and 2866); PPPoE Client (RFC 2516); ICMP (RFC 792); IEEE 802.1q VLAN tagging
	SSL protected universal access method (web-based authentication); MAC address authentication using local or RADIUS access lists; 802.1x authentication using EAP-SIM, EAP-TLS, EAP-TTLS and PEAP
	Web: Web proxy server; support for centralized portal
	AAA Security: RADIUS using EAP-MD5, PAP, CHAP, MSCHAP v2
	Fixed-IP address spoofing
	Per site and per user access lists; white list and black list support
	Bandwidth limiting per user or per VLAN
	Capacity: Up to 100 concurrent subscribers
Network Management	Encryption : Wi-Fi Protected Access (WPA and WPA2) with TKIP or AES support; Wired Equivalent Privacy (WEP) using static or dynamic keys of 40 or 128 bits
	Fully manageable using Colubris Network Management System (CNMS)
	SNMP v2c, MIB-II with TRAPS, RADIUS Authentication MIB (RFC 2618), Colubris extensions for user session control and AP management; RIPv2 extension MIB (RFC 1724)
	Embedded HTML management tool with secure access (SSL and VPN)
	Scheduled configuration and firmware upgrades from central server
	Per user activity records by time used or data transferred
Virtual Service Communities	Remote Syslog
	Up to 16 SSIDs each with unique MAC address, configurable SSID broadcasts
	Individual security and QoS profile per VSC
	Configurable DTIM and minimum data rate per VSC
Quality of Service (QoS)	Each VSC mapped to separate 802.1q VLANs
	L2/L3 classification: 802.1p VLAN priority, SpectraLink SVP, DiffServ
	Wi-Fi MultiMedia (WMM), 802.11e EDCA, Service-Aware priority assigned by VSC
RF Management	Max. VoIP call capacity: 8 active calls on 802.11b, 30 active calls on 802.11a/g
	Automatically selects channel on power-up and continuously optimizes channel selection based on background interference scan
	Configurable background rogue scanning
	Automatically adjusts transmit power to minimize interference
Wireless Distribution System (WDS) Mode	Automatic radio shut-down upon LAN failure detection
	Topologies: Point-point; point-multipoint
	Security: WPA2 peer authentication and encryption, VLAN tags
	QoS: Priority queuing honored for all traffic
	Configurable ACK Time Out
WLAN Monitor Mode	Peer DFS coordination in 802.11a channels
	Continuous full 2.4/5 GHz rogue scanning and optional SNMP TRAP generation, reports discrepancies from centralized list of known APs.

Radio Specifications		
	When configured for IEEE 802.11a operation	When configured for IEEE 802.11b or IEEE 802.11g operation
Data Rates Supported	6, 9, 12, 18, 24, 36, 48, 54 Mbps	802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
Frequency Band	USA: 5.250-5.350 GHz, 5.725 – 5.825 GHz Canada: 5.150 – 5.350 GHz, 5.725 – 5.825 GHz Europe: 5.150 – 5.350 GHz, 5.47 – 5.725 GHz (varies by country) Japan: 5.150 – 5.350 GHz, supports J52 or W52 and W53	North America and Europe: 2.412 – 2.462 GHz Japan: 2.412 – 2.484 GHz
Modulation	OFDM	802.11b: DSSS 802.11g: OFDM
Non-overlapping Channels	North America – 12, Europe – 19 (country specific), Japan – 4; 802.11h Dynamic Frequency Selection	Worldwide – 3
Receive Sensitivity (without antenna)	-87 dBm @ 6 Mbps -67 dBm @ 54 Mbps	802.11g Operation: -87 dBm @ 6 Mbps; -70 dBm @ 54 Mbps 802.11b Operation: -87 dBm @ 11 Mbps
Transmit Power Settings (Maximum power varies as per country regulations) (without antenna)	18 dBm +/- 2 @ 6-24 Mbps 12 dBm +/- 2 @ 54 Mbps 802.11h Transmit Power Control	802.11g Operation: 18 dBm +/- 2 @ 6-24 Mbps 13 dBm +/- 2 @ 54 Mbps 802.11b Operation: 18.5 dBm +/- 2 @ 1-11 Mbps
Standards Compliance	Radio Approvals: Wi-Fi Alliance, FCC Part 15.247, 15.407, RSS-210 (Canada), ETS 301 893, ETS 300 328 (Europe), ARIB STD-T71 (Japan)  EMI and Susceptibility (Class B): FCC Part 15.107 and 15.109, ICES-003 (Canada), VCCI (Japan), EN 301.489-1 and -17 (Europe)  Immunity: EN 50121-3-2	Radio Approvals: Wi-Fi Alliance, FCC Part 15.247, RSS-139-1, RSS-210 (Canada), ETS 301 893 (Europe), TELEC 33B (Japan)  EMI and Susceptibility (Class B): FCC Part 15.107 and 15.109, ICES-003 (Canada), VCCI (Japan), EN 301.489-1 and -17 (Europe)  Immunity: EN 50121-3-2
European Medical Compliance	EN60601-1-2	EN60601-1-2



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