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Enterprise WLAN Infrastructure

At-a-Glance



A leader in the wireless industry for over 80 years, Motorola offers one of the most market-proven and customer tested wireless portfolios on the market — with over a billion dollars a day transacted over Motorola WLAN infrastructures around the world.

The Motorola WLAN portfolio

Motorola's comprehensive integrated portfolio of wireless products is designed to meet virtually any wireless networking need. Unlike typical point solutions, Motorola's portfolio offers everything required to enable an end-to-end wireless enterprise, including wireless LAN infrastructure, mesh, point-to-point and point-to-multipoint bridges, wireless IPS and Voice-over-WLAN solutions — all with the proven interoperability required to simplify and reduce the cost of your mobility deployments.

Our indoor WLAN portfolio includes:

- **Wireless switches/controllers — delivering the most features for one price.** Motorola's wireless LAN switch controllers provide wireless network control, scalability, security, and reliability for deployments of any size — from small offices to the largest distributed global enterprises.
- **Indoor and outdoor wireless access points — offering high performance adaptive technology and mesh networking.** Motorola wireless access points provide a self-contained "network-in-a-box" that manages wireless traffic between users, access points and wireless switches. And our powerful Adaptive AP mode enables a Motorola wireless switch/controller to adopt Motorola access points, providing the best of both worlds — the ease of centralized and remote management as well as the ability to deliver uninterrupted wireless service in the event of a WAN link outage.
- **Best-in-class security.** The industry-leading Motorola AirDefense Wireless Intrusion Protection System (IPS) detects and neutralizes any threat, including intruders and rogue devices, while enhancing Motorola's integrated stateful Wireless (Layer 2-7) Firewall, VPN, AAA, and geofencing technologies. Four-factor access control includes identity, role, location, and policy compliance via NAC. Motorola AirDefense also defends non-Motorola wireless LANs with Wireless IPS, rogue elimination and more.

Motorola wireless LAN infrastructure

The global one-stop RF shop — enabling an end-to-end Wireless Enterprise with the industry's most comprehensive wireless portfolio

Motorola's comprehensive wireless LAN portfolio is packed with innovative features and functionality that set the bar for wireless LAN infrastructure — enabling the truly wireless enterprise. Motorola offers the only portfolio capable of providing the real indoor and outdoor coverage you need to extend your network to literally every inch of your facility — inside your four walls, out in the yard, between buildings and in the expansive outdoor areas common in oil and gas, education and other industries. Our unmatched reliability and gap-free security provide dependable and secure wireless access to the data, voice and video services required to streamline your business — and improve customer service. And you can count on a superior ROI — our products not only provide the most features for your investment dollars, but also dramatically reduce IT management time.

Gap-free security

You can count on Motorola to keep your network resources and your data secure every minute of every day. Motorola's innovative security features help keep your wireless infrastructure as secure as your wired infrastructure. Features include an integrated role-based wired and wireless firewall capable of stopping attacks at Layer 2 and Layer 3, AAA Radius Server, VPN and the best-in-class AirDefense™ Wireless IPS, so you're assured of FIPS and EAL-validated around-the-clock security for PCI, SOX and HIPAA compliance. The result is true gap-free security — for real wireless peace of mind.

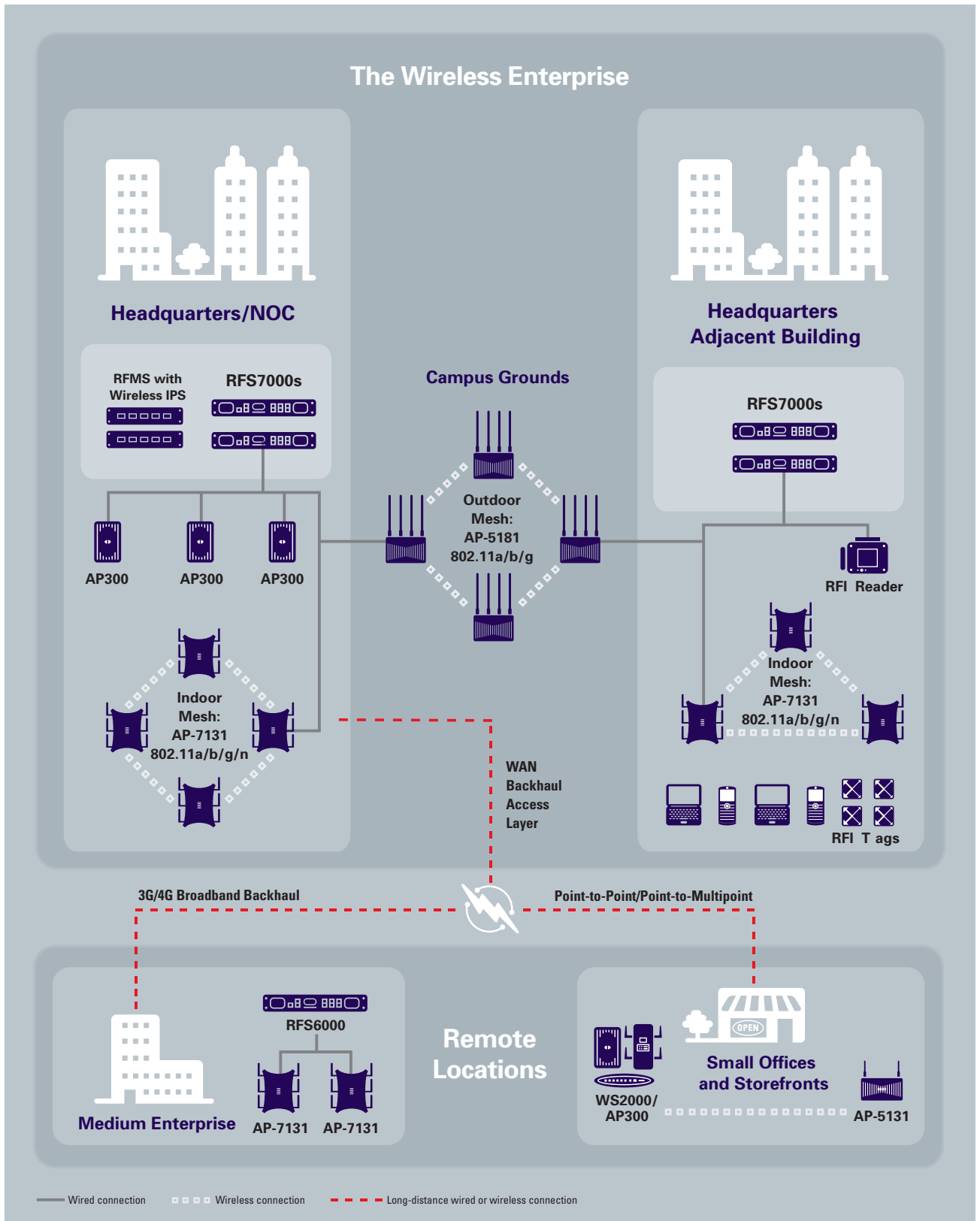
Unmatched reliability

Your wireless network enables business critical communications — you need resilience you can count on. Motorola wireless LANs are loaded with features that deliver unmatched reliability, providing a wireless connection that is every bit as dependable as your wired connections. Adaptive APs intelligently adapt to the ever-changing RF environment without intensive IT monitoring, automatically routing traffic around failures to ensure uninterrupted toll-quality application access. SMART RF automatically adjusts power and channels as needed to maintain a high quality and consistent connection. And with a unique clustering architecture, Motorola's wireless switch controllers can be deployed with 1:N redundancy, providing network-wide virtual support for all your access points.

Best ROI...and lowest TCO

Motorola wireless networks are second-to-none in features and quality, with sensible pricing that ensures an exceptional return on investment. While every wireless vendor claims low TCO, Motorola delivers proven full-featured, best-in-class networks for far less capital and day-to-day operational costs. Our standard feature set includes advanced functionality, such as mesh, high-availability and clustering as well as locationing and RFID engines — features that are often optional on competitive products. There are no access point or feature licenses — simply put, when you buy our products, you have the right to use all the integrated functionality. Motorola wireless LANs set the bar for ease of implementation and operation. Advanced troubleshooting further reduces support costs by eliminating up to 70 percent of on-site repair-related visits. And our dual-purpose access points provide wireless traffic and dedicated dual-band sensing, eliminating the need to purchase and manage a separate dedicated sensing infrastructure for a greener and more cost-effective approach to 24x7 security.

Scalable enterprise wireless infrastructure



Motorola's family of enterprise WLAN infrastructure easily scales to meet the needs of any enterprise. Extend cost-effective wireless voice and data throughout your literal and virtual environment with this diverse portfolio — from large enterprise campus environments to mid-size and smaller remote sites.

Motorola's wireless LAN portfolio

Wireless Switches



	WS2000 Wireless Switch	RFS6000 Wireless LAN Switch	RFS7000 Wireless LAN Switch
Product Overview	A wired/wireless edge gateway, this network-in-a-box is also a PoE switch and router, providing wired/wireless IDS/IPS, a AAA server, an IPsec VPN Gateway, a Stateful Firewall with mesh and dynamic RF management capabilities. The complete suite of integrated capabilities combines with support for up to 200 users, providing small to medium enterprises (SMEs) and small to medium branch (SMB) offices with a 'one stop shop' — and a phenomenally low TCO.	The RFS6000 provides a single platform capable of delivering carrier-grade wireless voice and data inside and outside the enterprise for medium to large organizations with 2,000-20,000 users. Improve operational efficiency and reduce the cost of mobility with a powerful comprehensive feature set including Adaptive AP, that delivers unmatched performance, security, resiliency and scalability. Built on Motorola's Wireless Next Generation (Wi-NG) architecture, the RFS6000 supports Wi-Fi, RFID, seamless roaming, next generation self-healing, 3G/4G wireless broadband backhaul, gap-free layered security, rich locationing services, 802.11n with Mesh, centralized management and more.	The RFS7000 delivers unmatched performance, security, resiliency, scalability and manageability for the large wireless enterprise/campus/warehouse, providing a single platform capable of delivering carrier-grade wireless voice and data for 8,000-96,000 users. Motorola's Wireless Next Generation (Wi-NG) architecture improves operational efficiency and reduces the cost of mobility with a powerful comprehensive feature set that includes Adaptive AP, Wi-Fi, RFID, seamless roaming, next generation self-healing, gap-free layered security, rich locationing services, 802.11n with Mesh, centralized management and more.
General Characteristics	<ul style="list-style-type: none"> Supports up to 6 AP300 802.11a/b/g access ports Supports up to 8 WLANs Supports up to 200 users Secure Guest Access Redundancy: Active-Standby PCI/HIPAA/SOX capable out-of-the-box 	<ul style="list-style-type: none"> Supports up to 48 AP300 802.11a/b/g dual radio access ports per switch and 576 per cluster Supports up to 256 802.11a/b/g/n Adaptive Access Points (AP-51X1/AP-7131) and 3,072 per cluster Supports up to 32 WLANs Supports up to 2,000 users per switch; 20,000 users per cluster ExpressCard™ slot for redundant broadband wireless connection & PoE+ Switching PCI/HIPAA/SOX capable out-of-the-box 	<ul style="list-style-type: none"> Supports up to 256 AP300 802.11a/b/g dual radio access ports per switch and 3,072 per cluster Supports up to 1,024 802.11a/b/g/n Adaptive Access Points (AP-51X1/AP-7131) and 12,000+ per cluster Supports up to 256 WLANs Supports up to 8,000 users per switch; 96,000 users per cluster PCI/HIPAA/SOX capable out-of-the-box
Gap-free Security			
Authentication	Access Control Lists (ACLs); pre-shared keys (PSK); 802.1x/EAP—transport layer security (TLS), tunneled transport layer security (TTLS), protected EAP (PEAP); Kerberos Integrated AAA/RADIUS Server with native support for EAP-TTLS, EAP-PEAP (includes a built in user name/password database; supports LDAP) and EAP-SIM*		
Encryption	WEP 40M28 (RC4); KeyGuard; WPA-TKIP; WPA2-CCMP (AES); 802.11i WPA2		
IDS/IPS	Multi-mode rogue AP detection; Rogue AP Containment; 802.11n Rogue Detection*; Ad-Hoc Network Detection*; Denial of Service protection against wireless attacks; client blacklisting; Anomaly Analysis Engine; Wired IPS**		
Guest Access	Secure guest access with AP300s	Secure Guest Access with AP300 as well as Adaptive APs	
24x7 Monitoring for Premium Security	Supported on the AP300	Supported on the AP300, Adaptive AP-5131 and Adaptive AP-7131	
IPSec VPN	Supports DES, 3DES, AES-128 and AES-256 encryption; supports site-to-site and client-to-site* VPN capabilities		
NAC Support	NAC support with third party systems from Microsoft and Symantec		
Role-based Wired/Wireless Firewall	Stateful Firewall	Identity based Stateful L2-L7 firewall provides protection against DHCP spoofing and ARP cache poisoning	
Geofencing	Location based access provides physical security as an additional parameter to network security		
Motorola Value Adds	Pre-emptive roaming; fast roaming with opportunistic channel scan; load balancing; Power Save Polling (PSP); Virtual AP and location-based access control		
Unmatched Reliability			
QoS	Voice prioritization; wireless bandwidth management and user bandwidth contracts; WMM AC; SpectraLink Voice Prioritization; SIP CAC		
High Availability Networks and Clustering	Supports Active-Standby configuration	Supports Active-Active and Active-Standby configurations. Ensures high availability networks with single console management that provides multiple levels of redundancy, increased scalability and failover capabilities. Multi-platform license sharing enables deployment of cost-effective networks.	
SMART RF	Supports self healing for neighbor recovery and interference avoidance	Next generation self-healing: enables the WLAN to automatically and intelligently adapt to changes in the RF environment to eliminate unforeseen gaps in coverage	
WAN Backhaul	3G cellular backhaul extensibility options		
Adaptive AP with Site Survivability and Mesh	Supports Wireless Bridging with AP-51X1 — can mesh with Motorola's thick Access Points to extend the network	Motorola's Independent Mesh Access Points (AP-51X1 a/b/g and AP-7131 a/b/g/n) can be deployed at remote locations yet centrally managed in the Network Operations Center (NOC) through the RFS6000 (single switch or a cluster for scalability). An IPSec VPN tunnel secures all traffic between the access points and the wireless switch. Remote Site Survivability (RSS) mesh access points deliver secure uninterrupted wireless service — providing unparalleled resiliency that survives a WAN link outage.	
Load Balancing and AP Steering	Clustering enables not only a high level of redundancy, but also provides a load balanced network for large deployments		
Best Return on Investment (ROI) — and lowest Total Cost of Ownership (TCO)			
Integrated Network Services	PoE switching, AAA server, DHCP server, NAT, Wired and Wireless firewall — all built-in at no additional cost		
Ease of Installation	Plug-and-play deployments for L2 and L3 save installation time and ongoing maintenance costs		
SMART License Sharing	Clustering capabilities allow for virtual license sharing among switches to provide highly scalable high availability networks		
Services			
Warranty	Hardware – 1 year; Software – 90 days		
Recommended Services	Service from the Start Advance Exchange Support; Wireless Infrastructure Device Software Support		

* Not supported on the WS2000; ** Not supported on the RFS6000 & RFS7000

Access Ports and Access Points



	AP-5131	AP-5181	AP-7131	AP300
Product Overview	The AP-5131 offers 802.11a/b/g enterprise-class wired and wireless networking and security features for small to medium businesses and enterprise small branch office locations. The 24x7 dual-band WIPS sensing and mesh networking combine to deliver gap-free security and the cost-effective extension of the corporate network in difficult-to-cable areas.	Motorola's AP-5181 outdoor 802.11a/b/g Adaptive Access Point delivers enterprise class wireless networking in harsh environments. Support of mesh networking enables rapid and inexpensive deployment in difficult-to-cable areas.	The AP-7131 is the industry's first high performance 802.11a/b/g/n Adaptive Services Access Point that cost-effectively delivers secure and resilient network services and enables high performance mobility applications in a Wireless Enterprise. The AP-7131 in a stand-alone or switch-managed adaptive mode provides 24x7 dedicated Wireless IPS sensing, high speed client access for data, voice and video and mesh networking. This integrated network-in-a-box delivers gap-free security services, unmatched reliability and high performance at the industry's lowest TCO.	Working in conjunction with Motorola's wireless switches, the AP300 Access Point (AP) delivers robust and feature rich IEEE 802.11a/b/g connectivity. Adoptable as either a Layer 2 or Layer 3 device, the AP300 can also be utilized as a sensor in conjunction with Motorola's Wireless Intrusion Protection System (IPS). Two models offer greater mounting flexibility: an internal antenna model designed for the carpeted space and an external antenna model that can be mounted above ceiling tiles.
General Specifications	<ul style="list-style-type: none"> 802.11a/b/g; DSSS and OFDM Dual and Single Radio options 802.3af Power-over-Ethernet (PoE) Mesh networking Adaptive AP support (enables adoption of Motorola Adaptive AP Access Points) Plenum-rated housing Up to 127 devices supported -4°F to 122°F/-20°C to 50°C Desktop; wall; above drop and under-ceiling 	<ul style="list-style-type: none"> 802.11a/b/g; DSSS and OFDM Dual and Single Radio options 802.3af Power-over-Ethernet (PoE) Mesh networking Adaptive AP support (enables adoption of Motorola Adaptive AP Access Points) Plenum-rated housing; IP56; NEMA 4X Up to 127 devices supported -22°F to 131°F/-30°C to 55°C Wall; pole 	<ul style="list-style-type: none"> 802.11a/b/g/n; DSSS and OFDM Tri, Dual and Single Radio options 802.3af and 802.3at Power over Ethernet (PoE) Mesh networking Adaptive AP support (enables adoption of Motorola Adaptive AP Access Points) Plenum-rated housing Up to 127 devices supported -4°F to 122°F/-20°C to 50°C Desktop; wall; above drop and under-ceiling 	<ul style="list-style-type: none"> 802.11a/b/g Dual and Single Radio options 802.3af Power over Ethernet (PoE) Plenum-rated external antenna model Operating temperature: <ul style="list-style-type: none"> Internal antenna model: 32°F to 104°F/0°C to 40°C External antenna model: -4°F to 122°F/-20°C to 50°C
Gap-free Security				
24x7 Wireless IPS Sensing	Supports gap-free detection and security with 24x7 dual band WIPS sensing and concurrent client access			Supports gap-free security with WS2000, RFS6000 and RFS7000 Wireless Switches, including 24x7 dedicated WIPS sensor
Authentication	Pre-shared keys (PSK); 802.1x/EAP - transport layer security (TLS); tunneled transport layer security (TTLS); protected EAP (PEAP)			
Encryption	WEP 40M28 (RC4); WPA-TKIP; WPA2-CCMP (AES); 802.11i WPA2			
Guest Access	Secure Guest Access with onboard or external RADIUS authentication			
IPSec VPN	Supports DES, 3DES, AES-128 and AES-256 encryption; supports site-to-site VPN capabilities			
Stateful Firewall	Stateful Layer 3 packet inspection; Stateful L2-L7 wireless firewall available in Adaptive AP mode with Wi-NG platforms; Access Control Lists			
PCI	Out-of-the-box PCI capable			
Unmatched Reliability				
Failover Adaptive Network Services at the Edge	Layer 3 routing; 802.1Q VLAN trunking and tagging; AAA Server; DHCP services; Dyn DNS; PPPoE			Supports unmatched reliability in dependent access port mode in conjunction with WS2000, RFS6000 and RFS7000; does not offer stand-alone or adaptive network services
QoS	Voice prioritization; WMM; WMM uAPSD; 802.1p; DiffServ/TOS			
Mesh Networking	Stand-alone mesh; Adaptive mesh; self-healing mesh failover; Layer 2 wired to Mesh failover			
Adaptive AP with Site Survivability	Full featured Access Point for local or remote edge deployments is centrally managed by switch with Remote Site Survivability options and full network and security services at the edge			
WAN Connectivity/Failover	Dual Gigabit Ethernet for LAN/WAN connectivity and WAN failover options			
3G WAN Backhaul	N/A	N/A	3G cellular backhaul extensibility options	
Best Return on Investment (ROI) — and lowest Total Cost of Ownership (TCO)				
Integrated Network Services w/Network-in-a-Box	Routing, security and network services integration eliminates point products and appliances, saving significant capex and opex			Supports the industry's lowest total cost of ownership with Motorola's wireless switch platforms
802.3af Dual Radio High Performance	Eliminates costly upgrades to PoE infrastructure			
Mesh Networking	Eliminates expensive PoE infrastructure in greenfield deployments and cost of cabling in hard-to-cable areas			
Easy to Provision and Deploy	Takes 75% less time to configure than comparable enterprise AP offerings in the market, reducing deployment and management overhead			
Single Platform with Adaptive ID for all environments	Industrial grade design with Adaptive Facade provides one platform with a single firmware to manage for all environments (carpeted or rugged) and all scenarios (campus, edge, remote deployments in standalone or adaptive mode), reducing complexity and overhead of deployment			
Services				
Warranty	Hardware – 1 year; Software – 90 days			Hardware – 1 year; Software – 90 days
Recommended Services	Service from the Start Advance Exchange Support; Wireless Infrastructure Device Software Support			Service from the Start Advance Exchange Support

Bridges and Client Adapters



	CB3000	LA-5127/LA-5137
Product Overview	The CB3000 provides robust, enterprise-class wireless connectivity for Ethernet-enabled devices such as printers, scales and point-of-sale equipment without card slots or native wireless capabilities.	Optimized for embedded mobile applications, these CompactFlash cards deliver the power of wireless connectivity to enterprise devices and industrial equipment.
WLAN	<ul style="list-style-type: none"> • 802.11a/b/g 	<ul style="list-style-type: none"> • LA-5127: 802.11b/g (Single internal antenna configuration) • LA-5137: 802.11a/b/g (Dual external antenna connector configuration)
Security	<ul style="list-style-type: none"> • WEP 40/128 • WPA and AES encryption • 802.1x support with PEAP • EAP/TLS • EAP/TLS authentication 	<ul style="list-style-type: none"> • WEP • WPA/WPA2 • EAP-TLS • EAP-TLS/MSCHAPv2 • PEAPv0/EAP-MSCHAPv2 • PEAPv1/EAP-GTC • EAP-SIM (802.1x)
Features	<ul style="list-style-type: none"> • Work group bridge with support for up to 16 client devices • Point-of-Sale support for IBM, NEC and others • Ad hoc mode (CB3000 to CB3000) for easy sharing of printers and other peripherals • Embedded secure web server for anywhere, anytime management • SNMP v2 support for easy integration with standard management systems 	<ul style="list-style-type: none"> • Robust security for Linux and Windows applications • CompactFlash type I/II form factor with 16-bit PC card interface • Upgradable hard MAC with on-card memory • Comprehensive software development kit for OEM products • Worldwide regulatory approval backed by Motorola service and support
Warranty	Hardware –1 year; Software – 90 days	Hardware –1 year; Software – OEM Development Agreement
Recommended Services	<ul style="list-style-type: none"> • Service from the Start Advance Exchange Support • Wireless Infrastructure Device Software Support 	<ul style="list-style-type: none"> • Service from the Start — Bronze

Motorola RF Management Software

Motorola's powerful set of management applications enables administrators to easily execute end-to-end design and management of wireless LANs.

Motorola LANPlanner®



Rapid and accurate design of high performance wireless networks. Ensure that your wireless LAN is designed to deliver maximum performance and value with Motorola LANPlanner — regardless of whether you are adding a new wireless LAN, expanding an existing wireless network or need to plan for the impact of new wireless applications. This comprehensive tool enables the design and deployment of wireless networks that meet the specific capacity, reliability and performance requirements in your environment. The ability to predict and visualize the impact of construction materials, network usage and the potential impact of co-channel interference enables the rapid design of wireless networks that provide superior wireless performance, superior quality of service (QoS) — and superior total cost of ownership (TCO). Post deployment reporting enables validation that the network is performing to expectations.

Motorola AirDefense Enterprise



Around the clock security monitoring. Proactively protect your wireless network, mobile devices and traffic from attacks and unauthorized access with Motorola AirDefense Enterprise, Motorola's industry leading wireless intrusion protection system. This dedicated scanning solution provides gap-free indoor and outdoor protection for your wireless LAN users, with 24x7 monitoring of any 802.11 network in local and distributed environments. With AirDefense Enterprise, your IT administrators have the tools they need to spot and instantly neutralize virtually any threat, including the ability to identify and accurately locate attacks and rogue devices as well as lock down wireless device connections. Built-in forensic support and industry standard reports for PCI, HIPAA, Sarbanes-Oxley, GLBA, FDIC and DOD provide powerful tools that enable cost-effective standards compliance. An optional module is also available, Advanced Troubleshooting, which proactively identifies wireless LAN configuration issues that affect business-critical applications, providing IT departments with the ability to fix network configuration issues remotely.

RF Management Suite (RFMS)



Comprehensive centralized tools to automate planning, deployment, security and management of your wireless LAN. Motorola's RFMS is a fully featured management solution that provides extraordinary network and security control throughout the complete lifecycle of an enterprise wireless LAN (WLAN)—from planning and deployment through day-to-day monitoring and troubleshooting. Highly scalable, RFMS supports thousands of access ports and access points to meet your needs today and well into tomorrow. Tight integration with Motorola's AirDefense Enterprise provides around the clock protection against unauthorized access as well as cost-effective compliance with PCI and other government and industry regulations. RFMS also integrates with Wireless Manager, providing a single interface for management of all wireless LAN and wireless broadband infrastructure. The result is a powerful unified solution that enables comprehensive management of all wireless infrastructure inside and outside the enterprise campus — including mesh, point-to-point and point-to-multipoint products — all from a single console. The expanded visibility provides the information needed to improve troubleshooting, issue resolution, performance and network availability.

Real Time Locationing System (RTLS)



Real-time enterprise asset tracking — no matter what you need to track, or how you want to track it. Available on Motorola's RFS6000 and RFS7000 Wireless Switches, this software-based engine provides comprehensive support for locationing solutions — including 802.11, RFID and third party offerings from industry leaders such as AeroScout, Ekahau and Newbury Networks. Standards-based support includes the EPC Global ALE interface for processing and filtering data from all active and passive tags, as well as the EPC Global LLRP interface for passive RFID tag support.



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