



# RFS7000

Enabling a secure and reliable Wireless Enterprise for campus, data center and large deployments



## FEATURES

### Wi-NG architecture — delivering a unified voice, data and RF management platform

Improve business process flow with one platform for wireless voice, video, data and multiple RF technologies — such as RFID, Wi-Fi (including 802.11n) and future technologies such as Wi-MAX; rich enterprise-class functionality includes seamless roaming across L2/L3 deployments, resilient failover capabilities, comprehensive security, toll-quality voice and other value-added services, such as multi-RF locationing

### Role-based wired/wireless firewall

Comprehensively secures and protects the wired and wireless network against attacks and unauthorized access at Layer 2 and Layer 3 with Stateful Inspection; ability to create identity and location-based policies provides granular control of network access

### SMART RF Management

Next generation self-healing: enables the WLAN to automatically and intelligently adapt to changes in the RF environment to eliminate unforeseen gaps in coverage

### High performance Wireless LAN Switch for the demanding enterprise networks

Designed for large scale, high bandwidth deployments, the RFS7000 Wireless LAN (WLAN) Switch provides highly scalable enterprise mobility in large enterprises, campuses and data centers. Motorola's landmark Wireless Next Generation (Wi-NG) operating system enables a comprehensive set of services, offering unmatched security, reliability and mobility for high performance 802.11n networks. Easy to deploy and manage, the RFS7000 provides a converged platform to deliver multimedia applications (data, voice, video), wireless networking, and value-added mobility services such as secure guest access and locationing for multi-RF networks.

### Cost-effective centralized management

The RFS7000 provides the tools you need to simplify and minimize the costs associated with day-to-day management of mobility solutions. The Wi-NG architecture provides unified management of network hardware, software configuration, and network policies, complete with built-in process monitors and troubleshooting tools. A valuable modular software offering, the RF Management Suite, provides centralized control over the entire lifecycle of your Motorola mobility solution — allowing you to easily design, deploy, monitor and secure your wireless network.

### Raising the bar on enterprise-class performance

The RFS7000 offers a multicore multithreaded Wi-NG architecture, intended for large scale, high bandwidth enterprise deployments. It easily handles from 8,000 to 96,000 mobile devices and 256 to 3,000 802.11 dual-radio a/b/g/n access ports or 1,024 Adaptive access points (AP-5131 a/b/g or AP-7131a/b/g/n) per switch. The RFS7000 delivers the investment protection enterprises require: Motorola's

patent pending clustering technology provides a 12X capacity increase, and Smart licensing enables a build-as-you-grow expansion of your network.

### Gap-free security for the Wireless Enterprise

Comprehensive network security features keep wireless transmissions secure and provide compliance for HIPAA and PCI. The RFS7000 provides gap-free security for the WLAN network, following a tiered approach to protect and secure data at every point in the network, wired or wireless. This complete solution includes a wired/wireless firewall, an integrated IPSec VPN gateway, AAA Radius Server and Secure Guest Access with a captive web portal, reducing the need to purchase and manage additional infrastructure. Additional security features include MAC-based authentication, comprehensive integrated IDS/IPS, Anomaly Analysis and more.

### Enabling toll-quality voice for the Wireless Enterprise

Support for VoWLAN provides cost-effective voice services throughout the wireless enterprise, enabling push-to-talk and more for employees inside the four walls as well as in outside areas such as the yard. The rich feature set provides granular control over the many wireless networking functions required to deliver high performance persistent clear connections with toll-quality voice. Quality of Service (QoS) ensures superior performance for voice and video services. WMM Admission Control, including TSPEC and SIP Call Admission Control, ensure dedicated bandwidth for voice calls as well as better control over active voice calls for a variety of VoIP handsets. Layer 3 hyper-fast secure roaming combines with readiness for external fixed-mobile convergence (FMC) solutions, enabling seamless voice services with true mobility across the enterprise.



### Enabling value-added mobility services

The RFS7000 supports seamless mobile access to multi-RF networks, enabling locationing and simplified real-time asset tracking throughout the network. In addition, the RFS7000 offers unparalleled management flexibility — the user is free to choose between Motorola’s RF Management System, a partner portal or any other enterprise application for central monitoring and visualization. Secure guest access, onboard RADIUS services, granular access, bandwidth control at the client level and automatic load balancing enable highly optimized, flexible and secure Hotspot deployments managed centrally through one console.

### Adaptive AP for increased network flexibility — and site survivability

The RFS7000 simplifies and reduces the cost of extending mobility to remote and branch offices as well as telecommuters. 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 RFS7000 (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.

### Put your RF on autopilot

The Wi-NG architecture delivers SMART RF Management, which provides the dynamic RF tuning required for optimal network performance. This feature takes self-healing to the next level, dramatically reducing network monitoring IT costs by enabling the WLAN to intelligently adapt to the ever-changing RF environment. The ability to dynamically adjust the power and channels on any access port automatically eliminates the gaps in coverage that occur when an AP fails or there is a change in your environment — for example, the introduction of an increased

volume of liquid or metal — all without any physical intervention. The elegant feature protects against under- or over-powering — scenarios that could reduce performance and network availability. And adjustments are completely transparent — there is no impact on voice calls and data sessions in progress — protecting the quality of service and the user experience to ensure user productivity.

### Maximize benefits — and minimize costs

All the enterprise class services such as security, voice, performance and resiliency are built into the Wi-NG architecture — the innovative and modular operating system (OS) for the RFS7000. These comprehensive services come at no additional cost and are packaged together to make mobility work — even better.

### End-to-end support

As an industry leader in mobility, Motorola offers the experience gained from deploying mobility solutions all over the globe in many of the world’s largest enterprises. Leverage this expertise through Motorola Enterprise Mobility Services, which provides the comprehensive support options you need to deploy and maintain your RFS7000 at peak performance. Motorola recommends protecting your investment with Service from the Start Advance Exchange Support, a multi-year program that provides the next-business-day device replacement you need to keep your business running smoothly and productively. This service also includes Comprehensive Coverage, which covers normal wear and tear, as well as internal and external components damaged through accidental breakage — significantly reducing your unforeseen repair expenses.

For more information, visit us on the web at [www.motorola.com/rfs7000](http://www.motorola.com/rfs7000) or access our global contact directory at [www.motorola.com/enterprisemobility/contactus](http://www.motorola.com/enterprisemobility/contactus)

### Real Time Locationing System (RTLS)

Provides rich locationing services to enable real-time enterprise asset-tracking through support for 802.11, RFID and third party locationing solutions — including industry leaders AeroScout, Ekahau, and Newbury Networks. Standards-based support for: EPC Global ALE interface for processing and filtering data from all active and passive tags; and EPC Global LLRP interface for passive RFID tag support

### Clustering and failover features

Supports multiple levels of redundancy and failover capabilities to ensure high availability networks; multi-platform license sharing enables deployment of cost-effective networks

### True mobility

Virtual AP provides better control of broadcast traffic and enables multiple mobile and wireless applications with quality of service when network is congested; Pre-emptive Roaming ensures Motorola mobile devices roam before signal quality degrades; Power Save Protocol optimizes battery life

## RFS7000 Specifications

---

### Packet Forwarding

802.1D-1999 Ethernet bridging; 802.11-802.3 bridging; 802.1Q VLAN tagging and trunking; proxy ARP; IP packet steering-redirection

---

### Wireless Networking

Wireless LAN: Supports 256 WLANs; multi-ESS/BSSID traffic segmentation; VLAN to ESSID mapping; auto assignment of VLANs (on RADIUS authentication); power save protocol polling; pre-emptive roaming; VLAN Pooling and dynamic VLAN adjustment; IGMP Snooping

Bandwidth management: Congestion control per WLAN; per user based on user count or bandwidth utilization; dynamic load balancing of AP300s and Adaptive APs in a cluster

---

---

Access ports: Supports 256 “thin” 802.11a/b/g AP300 access ports for L2 or L3 deployment per switch and 3,072 802.11a/b/g AP300s per cluster; Legacy support: AP100 for L2 deployments only

---

Adaptive AP: Supports adoption of 1,024 Adaptive AP-51X1 802.11a/b/g and AP-7131 802.11a/b/g/n access points in Adaptive Mode per switch and 12,288 per cluster; multiple country configuration support; Legacy support: AP-4131 port conversion for L2 deployments only

---

Layer 2 or Layer 3 deployment of Access Ports and Adaptive AP AP-51X1 802.11a/b/g and AP-7131 802.11a/b/g/n Access Points

---

IPv6 client support

---

*Continued on back*

## SPECIFICATION SHEET

RFS7000

Enabling a secure and reliable Wireless Enterprise for campus, data center and large deployments

### RFS7000 Part Numbers:

**RFS-7010-100R0-WR:**  
Zero Port Wireless Switch

**RFS-7010-10030-WR:**  
64 Port Wireless Switch

**RFS-7010-10010-WR:**  
128 Port Wireless Switch

**RFS-7010-10020-WR:**  
256 Port Wireless Switch

**RFS-7010-UC-16-WR:**  
16 Port Upgrade  
License Certificate

**RFS-7010-ADSEC-LIC:**  
RFS7000 License for  
Advanced Security

**RFS-7010-ADP-64:**  
RFS7000 Licenses for 64  
Adaptive Access Points

**RFS-7010-ADP-512:**  
RFS7000 Licenses for 512  
Adaptive Access Points

**RFS-7010-ADP-1024:**  
RFS7000 Licenses for 1,024  
Adaptive Access Points

**RFS-7010-APPL-LIC:**  
RFS7000 License for the  
Location Application License

Layer 3 Mobility (Inter-Subnet Roaming)	
Radio frequency automatic channel select (ACS); Transmit power control management (TPC); Country code-based RF configuration; 802.11b, 802.11g, 802.11a, and 802.11n	
<b>Network Security</b>	
Role-based wired/wireless firewall (L2-L7) with stateful inspection for wired and wireless traffic; Active firewall sessions — 205,000 per switch and 2,460,000 per cluster; protects against IP Spoofing and ARP Cache Poisoning	
Access Control Lists (ACLs): L2/L3/L4 ACLs	
Wireless 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, excessive authentication/association; excessive probes; excessive disassociation/deauthentication; excessive decryption errors; excessive authentication failures; excessive 802.11 replay; excessive crypto IV failures (TKIP/CCMP replay)
Geofencing:	Add location of users as a parameter that defines access control to the network
WIPS sensor conversion:	Supported on the AP300 and the Adaptive AP-5131 and AP-7131
Anomaly Analysis:	Source Media Access Control (MAC) = Dest MAC; Illegal frame sizes; Source MAC is multicast; TKIP countermeasures; all zero addresses
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
Transport encryption:	WEP 40/128 (RC4), KeyGuard, WPA—TKIP, WPA2-CCMP (AES), WPA2-TKIP
IPSec VPN gateway:	Supports DES, 3DES and AES-128 and AES-256 encryption, with site-to-site and client-to-site VPN capabilities; supports 2,048 concurrent IPSEC tunnels per switch — 24,576 per cluster
Secure guest access (Hotspot provisioning):	Local Web based authentication; URL redirection for user login; customizable login/welcome pages; support for external authentication/billing systems
Wireless RADIUS Support (Standard and Motorola Vendor Specific Attributes):	User Based VLANs (Standard) MAC Based Authentication (Standard) User Based QoS (Motorola VSA) Location Based Authentication (Motorola VSA) Allowed ESSIDs (Motorola VSA)
NAC support with third party systems from Microsoft and Symantec	
<b>Real Time Locationing System (RTLS)</b>	
RSSI based triangulation for Wi-Fi assets	
Tags supported: Ekahau, Aeroscout, Newbury, Gen 2 Tags	
RFID support: Compliant with LLRP protocol. Built-in support for the following Motorola RFID readers: fixed (XR440, XR450, XR480); mobile (RD5000) and handheld (MC9090-G RFID)	

### Optimized Wireless QoS

RF priority:	802.11 traffic prioritization and precedence
Wi-Fi Multimedia extensions:	WMM-power save with TSPEC Admission Control; WMM U-APSD
IGMP snooping:	Optimizes network performance by preventing flooding of the broadcast domain
SIP Call Admission Control:	Controls the number of active SIP sessions initiated by a wireless VoIP phone
Classification and marking:	Layer 1-4 packet classification; 802.1p VLAN priority; DiffServ/TOS

### System Resiliency and Redundancy

Active-Standby; Active:Active and N+1 redundancy with access port and MU load balancing; Critical resource monitoring  
SMART RF: Network optimization to ensure user quality of experience at all times by dynamic adjustments to channel and power (on detection of RF interference or loss of RF coverage/neighbor recovery)

Dual Firmware bank supports Image Failover capability

### Management

Command line interface (serial, telnet, SSH); secure Web-based GUI (SSL) for the wireless switch and the cluster; SNMP v1/v2/v3; SNMP traps—40+ user configurable options; Syslog; TFTP Client; secure network time protocol (SNTP); text-based switch configuration files; DHCP (client/server/relay), switch auto-configuration and firmware updates with DHCP options; multiple user roles (for switch access); MIBs (MIB-II, Etherstats, wireless switch specific monitoring and configuration); Email notifications for critical alarms; MU naming capability

### Physical Characteristics

Form factor:	1U Rack Mount
Dimensions:	1.75 in. H x 17.32 in. W x 15.39 in. D 44.45 mm H x 440 mm W x 390.8 mm D
Weight:	13.5 lbs./6.12 kg
Physical interfaces:	4 10/100/1000 Cu/SFP Ethernet interfaces, 1 10/100 OOB port, 1 CF card slot, 2 USB slots, 1 serial port (RJ45 style)
MTBF:	>65,000 Hours

### Power Requirements

AC input voltage:	90 – 264 VAC 50/60Hz
Max AC input current:	6A@115 VAC, 3A@230 VAC
Input frequency:	47 Hz to 63 Hz

### User Environment

Operating temperature:	32° F to 104° F /0° C to 40° C
Storage temperature:	-40° F to 158° F/-40° C to 70° C
Operating humidity:	5% to 85% (w/o condensation)
Storage humidity:	5% to 85% (w/o condensation)

### Regulatory

Product safety:	UL / cUL 60950-1, IEC / EN60950-1
EMC compliance:	FCC (USA), Industry Canada, CE (Europe), VCCI (Japan), C-Tick (Australia/New Zealand)



**MOTOROLA**

motorola.com

Part number SS-RFS7000. Printed in USA 06/09. MOTOROLA and the Stylized M Logo are registered in the US Patent & Trademark Office. All other product or service names are the property of their respective owners. ©2009 Motorola, Inc. All rights reserved. For system, product or services availability and specific information within your country, please contact your local Motorola office or Business Partner. Specifications are subject to change without notice.