



# RFS6000

Enabling a secure and resilient Wireless Enterprise for medium to 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 on one platform — 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

### Adaptive AP: extending the enterprise

Enables centralized management of mesh access points at remote sites including automatic firmware upgrades; provides site survivability for remote locations with 802.11a/b/g/n networks for unparalleled resiliency

### Wireless LAN (WLAN) switching and voice communications platform

The RFS6000 Enterprise WLAN Switch from Motorola enables the wireless enterprise by offering an integrated WLAN communication platform that delivers secure and resilient voice, video and data applications. Architected on the innovative and modular Wi-NG foundation, the RFS6000 provides wired and wireless networking services, multiple locationing technologies such as Wi-Fi, RFID and UWB; resiliency via 3G/4G wireless broadband backhaul; and high performance with 802.11n networks. With the enterprise class RFS6000, business will enjoy the best in class performance, security, scalability and manageability required to meet the needs of demanding mission critical business applications.

### Cost-effective centralized management

Based on Motorola's landmark Wireless Next Generation (Wi-NG) operating system, the RFS6000 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. In conjunction with the RF Management Suite (sold separately), the RFS6000 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 and network resiliency

The RFS6000 offers a multicore multithreaded CPU-based Wi-NG architecture capable of supporting 2,000 to 20,000 mobile devices and up to 48 dual radio 802.11 a/b/g access ports or Adaptive APs (AP-5131 a/b/g or AP-7131 a/b/g/n). Motorola's patent pending clustering technology provides a 12X capacity increase, complete with Smart licensing for build-as-you-grow networks. The result is an architecture that is purpose-built to deliver high availability — and high scalability. In addition, a user accessible ExpressCard™ Slot is capable of hosting a broadband card (3G/4G) for a redundant wireless WAN backhaul connection, providing a truly self-sustainable wireless enterprise.

### Gap-free security for the Wireless Enterprise

Comprehensive network security features keep wireless transmissions secure and provide constant compliance for HIPAA and PCI. The wide range of industry standards-based security mechanisms enable enterprises to create a layered security strategy to meet the needs of virtually any application. This complete solution includes an integrated IPSec VPN gateway, AAA Radius Server, and Firewall with Stateful Packet Inspection capability 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 IDS/IPS, Anomaly Analysis and more.

### 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

### Comprehensive layered security

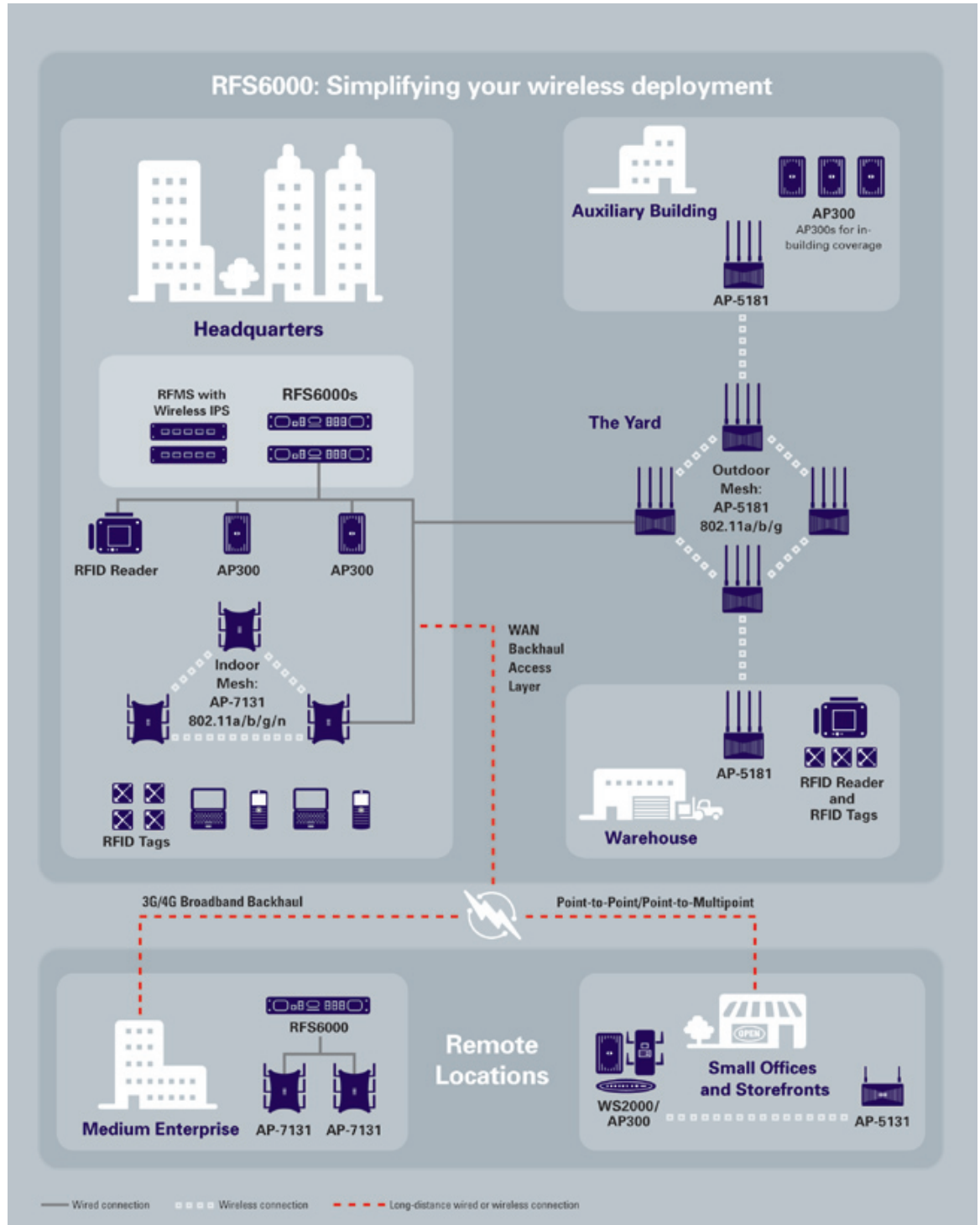
Exceptional level of data and network protection without sacrificing fast roaming, including: WPA2-CCMP (with 802.11i fast roaming options); Stateful Firewall; integrated RADIUS Server; IPSec VPN Gateway; Secure Guest Access Provisioning; and 24x7 dedicated security via Motorola's Wireless IPS, providing the advanced technology required to detect any rogue network, including 802.11n

### Enhanced End-to-End Quality of Service (QoS)

Enhances voice and video capabilities; prioritizes network traffic to minimize latency and provide optimal quality of experience; Wi-Fi Multimedia Extensions (WMM-Power Save) enhances multimedia application support and improves battery life and capacity; network optimization through granular bandwidth contracts based on bandwidth utilization network load and number of users for different applications being used, in different locations; TSPEC Admission Control ensures ample bandwidth and a superior user experience for VoIP calls

## RFS6000 network architecture

The RFS6000 offers the comprehensive functionality necessary to extend wireless voice, video and data access inside medium to large enterprises — as well as to remote locations such as branch offices.



## 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, ensures dedicated bandwidth for voice calls as well as better control over active voice calls. In addition, the fixed mobile convergence (FMC) ready RFS6000 provides support for future services, including the extension of the desk phone to mobile devices over the WLAN and WWAN.

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

The RFS6000 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 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.

## Put your RF on autopilot

The latest addition to the Wi-NG architecture is SMART RF Management. 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 RFS6000. 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 RFS6000 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/rfs6000](http://www.motorola.com/rfs6000) 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

# RFS6000 Specifications

### Packet Forwarding

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

### Wireless Networking

Wireless LAN: Supports 32 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

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

### Access Ports:

Supports 1-48 "thin" access ports; automatic access port adoption with ACLs; access port load balancing; direct sequence access point-to-access port conversion; supports AP300s and AP100

### Adaptive AP:

Supports 1-48 adoption of the Independent Motorola AP-51X1 802.11a/b/g and AP-7131 802.11a/b/g/n Access Points in Adaptive Mode for remote site and branch office solutions

### Power-over-Ethernet:

Integrated; up to 29.7 watts per Ethernet port, up to a maximum of 180 watts for simultaneous operation

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

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## SPECIFICATION SHEET

RFS6000

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IPv6 client support	
Layer 3 Mobility (Inter-Subnet Roaming)	
Supported Access Ports and Access Points:	AP300 (802.11a/b/g); L2 and L3 deployments with static IP support; AP-51X1 802.11a/b/g Adaptive AP mode and AP-7131 802.11a/b/g/n Adaptive Mode Access Points; Legacy AP support — AP100 and AP-4131 L2 deployments only
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>	
Layer 3 Stateful Inspection Firewall	
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, 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)
WIPS sensor conversion:	Supported on the Adaptive AP-5131 and AP300
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; supports site-to-site and client-to-site VPN capabilities
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, Aer Scout, 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)
<b>Optimized Wireless QoS</b>	
RF priority:	802.11 traffic prioritization and precedence
Wi-Fi Multimedia extensions:	WMM-power save with TSPEC Admission Control; WMM U-APSD
Classification and marking:	Layer 1-4 packet classification; 802.1p VLAN priority; DiffServ/TOS

<b>System Resiliency and Redundancy</b>	
Active:Standby; Active:Active and N+1 redundancy with access port and MU load balancing; self healing; 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	
<b>System Extensibility</b>	
ExpressCard™ Slot:	Optional EVDO/HSPDA card available for Broadband Backhaul Services in the future
PCI-X interface	
<b>Management</b>	
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	
<b>Physical Characteristics</b>	
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:	14 lbs./6.35 kg
Physical interfaces:	1x Uplink Port -10/100/1000 Cu/ Gigabit SFP interface 8x 10/100/1000 Cu Ethernet Ports with 29.7 Watts PoE, 802.3af and 802.3at Draft 1x 10/100 Management Interface (OOB port) 1x USB 2.0 Host 1x ExpressCard™ Slot (in USB mode) 1X PCI-X Interface 1x Serial Port (RJ45 style)
MTBF:	>65,000 Hours
<b>Power Requirements</b>	
AC input voltage:	90 – 264 VAC 50/60 Hz
Max AC input current:	6A@115 VAC, 3A@230 VAC
Input frequency:	47 Hz to 63 Hz
<b>User Environment</b>	
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)
Heat dissipation:	665 BTU per hour
<b>Regulatory</b>	
Product safety:	UL / cUL 60950-1, IEC / EN60950-1
EMC compliance:	FCC (USA), Industry Canada, CE (Europe), VCCI (Japan), C-Tick (Australia/New Zealand)
<b>Recommended Enterprise Mobility Services</b>	
Customer Services:	Service from the Start Advance Exchange Support
<b>Part Numbers</b>	
RFS-6010-100R0-WR:	Zero Port Wireless Switch
RFS-6010-10010-WR:	8 Port Wireless Switch
RFS-6010-10030-WR:	24 Port Wireless Switch
RFS-6010-10060-WR:	48 Port Wireless Switch
RFS-6010-UC-08-WWR:	8 Port RFS6000 Series Upgrade Certificate



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