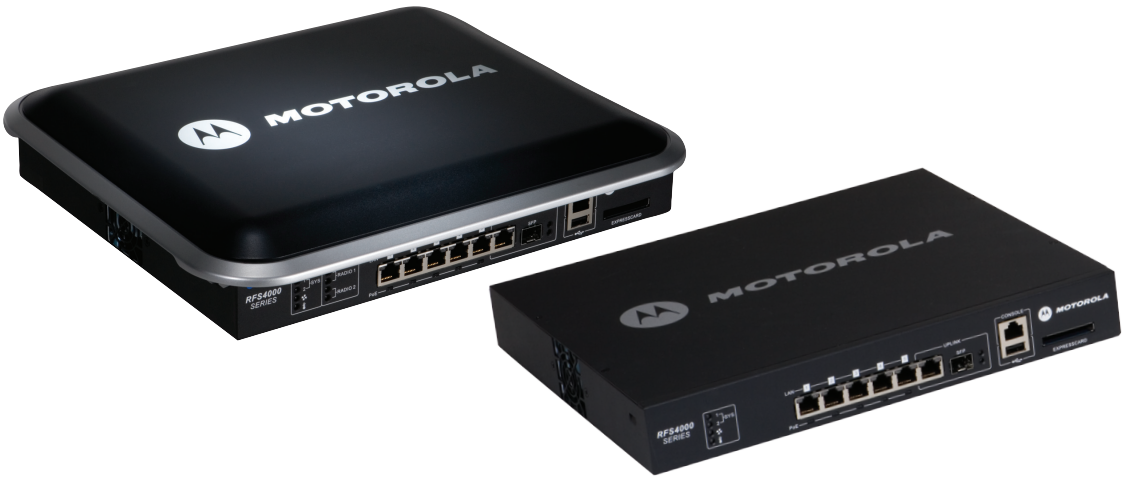
RFS4000 Series

802.11n Integrated Services Controller



FEATURES

A converged platform of features & functionality
The RFS4000 is a fully integrated 802.11n wireless services controller, 802.11n access point, wired switch with 5 POE ports rolled into one, with IPSEC VPN/firewall/ WIPS security, RADIUS & DHCP server, location & RFID engines, 3G failover, and more

Wi-NG Operating System — 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

True convergence of wired and wireless services for branch facilities

The Motorola RFS4000 802.11n wireless services controller integrates wired, wireless and security networking features into a compact and easy-to-use form factor, enabling organizations to create survivable branch networks using a single platform. The RFS4000 is also available with an integrated dual radio dual band 802.11n access point that features extensive coverage and performance — meeting all the needs of SME/ SMB. In addition, the RFS4000 Series offers built in applications such as Locationing for Wi-Fi and RFID as well as Hotspot and VoWLAN/Video Services.

Always on secure networking

The RFS4000 offers multiple features that ensure reliability and survivability of branch networking services in virtually any situation. The RFS4000 protects against access point and mesh node failure with SMART RF, a feature that keeps users on-Net with automatic optimization and healing. Motorola's patent pending clustering mechanism protects against wireless switch failure and offers Active/Active or Active/Standby controller redundancy options. In the event of a WAN outage, a redundant 3G ExpressCard guarantees Internet services by providing WAN backhaul options. With the Integrated Dual Radio Dual band form factor, the RFS4000 is the only Services Controller in the Industry that offers concurrent access in the 2.4 and 5 GHz bands, with mesh capabilities in a multi-cell environment. Also, as a hallmark of Motorola Enterprise WLAN and Security Solutions, one the of radios in the RFS4000 can be utilized to provide 24x7x365 IDS/IPS, Spectrum Analysis and Advanced Troubleshooting capabilities — while the other radio can provide concurrent access to wireless users.

Finally, the RFS4000 Series displays true convergence by securing both the wireless and wired network with its Integrated Stateful L2-7 Wired/Wireless Firewall, Integrated IDS/IPS engine for Rogue Detection and Containment, Anomaly Analysis engine, DoS Attack protection and Ad-Hoc Network Detection.

Extremely simple to deploy and manage — no local IT support required

Multiple features combine to eliminate the need for onsite IT support for deployment and day-to-day management, including: built-in intelligence that allows the network to identify and automatically address network issues; zero touch installation; and the integration of all wired and wireless networking infrastructure into a single device that is easily managed back in the NOC via auto-discovery and auto-configuration.

Wireless Intrusion Detection/Protection System
The integrated IDS/IPS provides defense against over-the-air attacks by leveraging the sensing capabilities of AP300/ AP51x1/AP7131

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

Advanced services for the SMART Branch

The RFS4000 not only offers wired and wireless networking and security services, but also value-added and productivity applications. An integrated customizable Secure Guest Access application with distributed or centralized authentication enables a branch network to offer hotspot services for guests. A real-time locationing system for Wi-Fi and RFID alike allows centralized asset tracking and monitoring. Storage via USB allows the RFS4000 to be used for software image distribution for clients in a branch network. 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 outside. 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, SIP Call Admission Control, and 802.11k radio resource management, ensures dedicated bandwidth for voice calls as well as better control over active voice calls for a variety of VoIP handsets. In addition, the FMC ready RFS4000 provides support for third-party solutions and future services, including the extension of the desk phone to mobile devices over the WLAN and WWAN.

End-to-end support

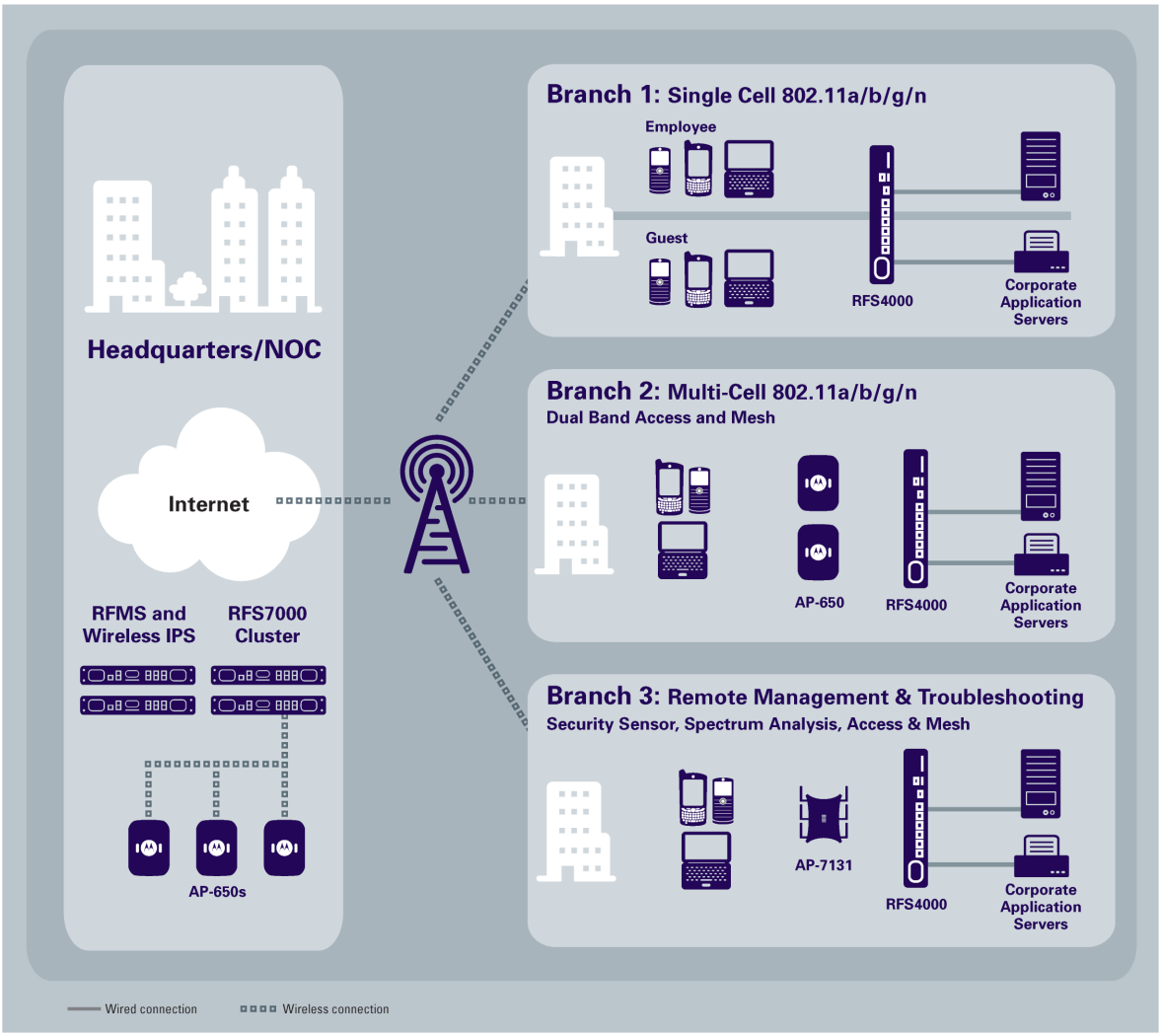
As an industry leader in mobility, Motorola offers the experience gained from deploying mobility solutions all over the globe in many of the world's largest enterprises. Leverage this expertise through Motorola Enterprise Mobility Services, which provides the comprehensive support programs you need to deploy and maintain your RFS4000 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 , technical software support and software downloads 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/rfs4000 or access our global contact directory at www.motorola.com/enterprisemobility/contactus

RFS4000 Series: True wired/wireless convergence for a smart branch network

RFS4000 network architecture — enabling branch mobility

The RFS4000 enables distributed enterprises to provide any size branch office with high performance, comprehensive, cost-effective and secure wireless and wired networking services.



Role-based wired/ wireless firewall
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

3G Wireless for WAN Backhaul
Support for 3G wireless cards to backhaul WAN traffic when the primary WAN Link fails

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; SIP Call Admission Control and Wi-Fi Multimedia Extensions (WMM-Power Save) with Admission Control enhances multimedia application support and improves battery life and capacity

RFS4000 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 24 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; bandwidth provisioning via AAA server

Layer 2 or Layer 3 deployment of thin access ports and Adaptive AP AP-51X1 802.11a/b/g and AP-7131 802.11a/b/g/n access points	
Layer 3 Mobility (Inter-Subnet Roaming)	
IPv6 client support	
Thin Access Ports:	Supports 6 "thin" 802.11a/b/g AP300 access points for L2 or L3 deployment per RFS4000 Switch/controller and 72 802.11a/b/g AP300s per cluster; Legacy support: AP100 for L2 deployments only
Adaptive AP:	Supports adoption of 6 adaptive AP-51X1 802.11a/b/g and AP-7131 802.11a/b/g/n access points in adaptive mode per RFS4000 Switch/controller and 72 per cluster; multiple country configuration support; Legacy support: AP-4131 port conversion for L2 deployments only

Continued on back

RFS4000 Part Numbers:

RFS-4010-00010-WR:
6 Port RFS4000 Wireless Switch/ Controller

RFS-4010-MTKT1U-WR:
I RU Mounting Kit Accessory

Power-over-Ethernet:	Integrated; up to a maximum of 90 watts for simultaneous operation

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

Network Security

Role-based wired/wireless firewall (L2-L7) with stateful inspection for wired and wireless traffic; Active firewall sessions — 50,000 per RFS4000 Switch/controller and 600,000 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); Suspicious AP, Authorized device in ad-hoc mode, unauthorized AP using authorized SSID, EAP Flood, Fake AP Flood, ID theft, ad-hoc advertising Authorized SSID
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
802.11w:	Provides origin authentication, integrity, confidentiality and replay protection of management frames for Motorola's AP300 access point
IPSec VPN gateway:	Supports DES, 3DES and AES-128 and AES-256 encryption, with 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, usage-based charging
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

Real Time Locationing System (RTLS)

RSSI based triangulation for Wi-Fi assets

Tags supported:	Ekahau, Aeroscout, 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
802.11k:	Provides radio resource management to improve client throughput (11k client required)
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

Virtual IP: Single virtual IP (per VLAN) for a switch/contoller cluster to use as the default gateway by mobile devices or wired infrastructure

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

System Extensibility

ExpressCard™ Slot: Driver support for 3G wireless cards for WAN backhaul

- AT&T (NALA) – Option GT Ultra Express
- Verizon (NALA) – Verizon Wireless V740 Express Card
- Vodaphone (EMEA) – Novatel Merlin XU870
- Vodaphone (EMEA) – Vodaphone E3730 3G Expresscard
- Telstra (Australia) – Telstra Turbo 7 series Expresscard (Aircard 880E)
- General Use (NALA/APAC) – Novatel Merlin XU870

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 Kit available
Dimensions:	1.75 in. H x 12 in. W x 10 in. D 44.45 mm H x 304.8 mm W x 254.0 mm D
Weight:	4.75 lbs./2.15 kg
Physical interfaces:	1x Uplink Port -10/100/1000 Cu/ Gigabit SFP interface 5x 10/100/1000 Cu Ethernet Ports, 802.3af and 802.3at Draft 1x USB 2.0 Host 1x ExpressCard™ Slot 1x Serial Port (RJ45 style)
MTBF:	>65,000 Hours

Power Requirements

AC input voltage:	100-240 VAC
Max AC input current:	3A
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)
Heat dissipation:	95 BTU per hour

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)

Recommended Enterprise Mobility Services

Customer Services:	Service from the Start Advance Exchange Support

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