Meru Radio Switch, RS4000

High Capacity Wireless LAN Access with Multi-mode & Multi-radio, Radio Switch

Meru Networks' Radio Switch, RS4000 is the only way to add capacity to your enterprise WLAN without adding complexity. WLAN capacity problems can be addressed in University auditoriums and hospitals with voice and data Wi-Fi devices, high-density offices and other areas where multiple devices need access simultaneously. The Radio Switch is a plug-and-play upgrade to existing WLANs without the need to re-plan the wireless network. Built on standard, proven wireless networking technology, the Radio Switch uses Meru's industry leading RF intelligence and 802.11 technologies to re-write the rulebooks for enterprise WLAN deployments. The Radio Switch is unique in its simplicity. Just like wireless access points, the Radio Switch can be installed wherever wireless coverage is needed. For large buildings with multiple rooms and floors, more than one Radio Switch can be installed to cover the desired area. But, different than a typical access point, Radio Switch, RS4000 allows corporations to simultaneously deploy and use four 802.11 channels, resulting in a 400% increase of your WLAN network capacity. With Meru Networks, the unwired enterprise is a reality today.

Four Radio Omni-directional Coverage

The Radio Switch is ideal for indoor applications. Using Meru’s patent-pending wideband omnidirectional antenna, the Radio Switch can simultaneously serve multiple 802.11b/g and 802.11a channels throughout every square foot of the coverage area. With the Radio Switch, WLANs are no longer bound to density/performance trade-off rules governing the traditional access points.

Upgrade Performance Without Changing Your Network

Due to the limitations of other access points, WLAN performance and price were always thought to be tied together. If you wanted higher density coverage, you had to deploy more access points in order to serve more channels. The Radio Switch shatters this model by providing the performance of multiple access points in a single product. This results in a savings of over 70% in enterprise deployment and ongoing management costs. The Radio Switch’s omni-directional antenna enable enterprise IT departments to upgrade network capacity without ever worrying about changing the coverage area. The antenna is capable of serving all available channels simultaneously to every square foot of coverage area providing unprecedented voice and data performance at a fraction of the cost of traditional WLAN access points.

Lower Operational Overhead With Better Application Performance

Given the shared and random nature of the wireless medium, adding access points for capacity does not always work and often causes application failures which in turn increase IT helpdesk expenses. Meru’s Air Traffic Control technology furthers the innovation of the high-capacity Radio Switch by ensuring

application performance. The Radio Switch monitors wireless clients and the associated traffic, and then spreads the load across its radios and different channels for better application performance. Combining the load-balancing techniques for superior traffic management with higher bandwidth from multiple radios, the Radio Switch is an ideal choice for high user-density WLANs.

Investment Protection With Modular Architecture

The Radio Switch is designed to grow with your bandwidth requirements. The modular “card-cage” chassis allows for simple & cost-effective field upgradeability to add up to 4 more 802.11a & 802.11b/g radios and a path to 802.11n radios (when available). The same wideband omni-directional antenna will extend to support the additional 802.11a & 802.11b/g radios.

Wireless Specifications	
Wireless Interfaces	4 radios. IEEE 802.11a and IEEE 802.11b/g
Power Management	Optimal power control in 1 dBm increments
Antenna	RP F SMA jacks on housing for external antennas for specific coverage requirements, or 5 dBi omnidirectional for indoor use (included)
	Wideband antenna for simultaneous use of 802.11a (5GHz) and 802.11b/g (2.4GHz) operation
Wireless Medium Access	Wi-Fi Compliant 802.11 MAC standard
Frame Size	Peak frame size of <2250 bytes
	Fragmentation and Reassemnly of 802.11/Ethernet frames supported
Client Support	All Wi-Fi compatible clients
	Power Save clients
	Clients that perform active and passive scanning
802.11a	
Frequency Band	5.180 – 5.240 GHz 8 channels (34, 36, 38, 40, 42, 44, 46, 48)
	5.280 – 5.320 GHz; 4 channels (52, 56, 60, and 64) NOTE: FCC certification methods still pending, these channels may not be legally available in US at FCS
	5.745 – 5.825 GHz; 5 channels (149, 153, 157, 161, and 165)
Operating Channels	Configurable nased on country regulations
Data Rates	54, 48, 36, 24, 18, 12, 9 and 6 Mbps with automatic rate adaptation
Transmit Power	~ +16 dBm (40 mW) nominal; transmit power, indoor/outdoor usage, antenna type and gain are country regulations dependent
Receive Sensitivity	-70 dBm at 54 Mbps, -86 dBm at 6 Mbps
802.11b/g	
Frequency Band	Hardware supports 2.40-2.50 GHz 2.4 GHz - 2.4835 GHz 2.4 GHz - 2.497 GHz Japan only 802.11b/g for rogues
Operating Channels	1-11 US/Canada, 1-13 Europe, and 1-14 (Japan) 3 non-overlapping channels
Transmit Power	~+20 dBm (100 mW) nominal, country

	regulations dependent
802.11b Data Rates	11, 5.5, 2 and 1 Mbps with automatic rate adaptation
802.11g Data Rates	54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1 Mbps
802.11b Receiver Sensitivity	-85 dBm at 11 Mbps, -93 dBm at 1 Mbps with BER 10E-5
802.11g Receiver Sensitivity	-73 dBm at 54 Mbps, -85 dBm at 6 Mbps
Network Specifications	
Forwarding	802.3/802.11 bridging
Network Interfaces	2 Auto-sensing 10/100 Base-TX Ethernet (RJ-45)
Addressing	1 IP address per RS4000. DHCP or Manual Assignment
	DHCP Passthrough for Wireless clients
VLAN	802.1Q Tagging Support
Performance	Load Balancing of clients across channels based on traffic load
Management	
Administrative Access	SSH, Telnet, Console Over Ethernet
Configuration	IOS-like CLI
Troubleshooting and Local Access	Advanced troubleshooting CLI through Ethernet
Remote/Central Management	SNMP Interoperability with third party Station Centralized station for Fault, Configurations, Accounting, Security (FCPS)
SNMP Support	SNMP v1/v2c Agent & Monitoring Meru Private MIB, 802.11MIB, MIB II, RFC 2869
Remote Logging	Syslog v1 and v2 – failure alerts and change notifications
Software Upgrade	Support to allow a 3rd party management application to: • Upgrade multiple Radio Switches from a single point. • Roll-back if upgrade fails • Maintain configuration and network settings
Security	
Layer 2 Security	802.11 Security: WEP-64, WEP-128, 802.1x w/ PEAP
Encryption	WEP (RC4) hardware support TKIP-ready hardware AES-ready hardware
Radius Interoperability	Microsoft IAS FreeRadius
Layer 3 Security	VPN Passthrough
Physical Specifications	
Dimensions	9.5" (W) X 8.5" (L) X 3.875 (H)"
Weight	Xxx grams
Power Type	Power over Ethernet, IEEE 802.3af compliant
Maximum Power draw	22W (through 2 PoE connections)
Environmental	Indoor Operating Temperature: 32°F to 122°F (0°C to 50°C)
	Indoor Operating Humidity: 0% to 95% humidity (non-condensing)

	Indoor Storage and Transit Temperature: 40°F to 185°F (-40°C to 85°C)
	Indoor Storage and Transit Humidity: 0% to 95% relative humidity (non-condensing)
Indicators	4 LEDs for monitoring power, Ethernet activity, 802.11a activity, and 802.11b/g receive
Compliance	Radio: FCC Part 15.247; Safety: UL 1950; Plenum-rating (UL 2545); EMI: FCC Part 15.107, 15.109; Applicable per-country certifications; Wi-Fi Certified
Warranty	Hardware 1 year; Software 90 days Red Carpet Service Options