HP R100 Wireless VPN Router Series

Key features

- High-speed connectivity with 4-port gigabit switch and 11n single radio/11ac dual radio access point
- Advanced security features like SPI firewall, URL/MAC/IP/Content filters, and DoS attack protection
- VPN initiation and termination (IPsec, L2TP, PPTP) for secure data transfers
- USB port for storage applications
- Intuitive graphical interface with easy setup wizard for simple management

Product overview

The all-in-one HP R100 Wireless VPN Router Series delivers secure high-performance Internet access and wired/wireless connectivity for offices and remote/mobile employees. Part of the HP OfficeConnect portfolio, the routers feature the next-generation HP Networking user interface and easy setup wizard that are designed for simplicity and reliability to get your business connected quickly.

The router includes a Stateful Packet Inspection (SPI) firewall, and enterprise grade VPN technology, combined with wireless encryption features like WPA/WPA2 encryption for secure data transfer. Advanced security features like IEEE 802.1X, URL filters, content filters, MAC filters, and trusted users management keep your network safe from outside threats and unauthorized access. Time-based rules that enable scheduling rules for radios and security filters; combined with email alerts simplify management tasks for users.

With a compact executive design featuring internal antennas, the routers are ideal for unobtrusive use in office environments.

Features and benefits

Wireless features

• IEEE 802.11 a/b/g/n/ac compliance

Superior wireless performance with Wi-Fi-certified built-in access points. R110 model has built-in single radio dual band IEEE 802.11a/b/g/n compliant access point. R120 model has built-in dual radio 802.11 a/b/g/n/ac compliant access point

• Multiple-input Multiple-output (MIMO)

Both models support 3x3 MIMO antennas to ensure wider wireless coverage and superior throughput

• Multiple SSIDs

Each radio supports up to 4 SSIDs to help segregate wireless clients and apply granular policies

• WMM (IEEE 802.11e)

Provides quality of service (QoS) to wireless clients based on access categories like voice, video, best effort, and background

• WMM-power save

WMM-power save mode helps reduce power consumption on wireless network

• Wireless Distribution System (WDS)

Allows users to expand wireless coverage without the requirement for a wired connection. R100 series routers can be linked together via the wireless medium (using SSIDs), while at the same time servicing clients in the vicinity of each router

• Wi-Fi Protected Setup (WPS v2)

WPS v2 protocol allows customers to easily create secure wireless link between wireless client devices that support WPS and the router

• SSID to VLAN mapping

Allows user to segregate wireless traffic

Security

• Stateful firewall

Enforces firewall policies to control traffic and filter access to network services; maintains session information for every connection passing through it, enabling the firewall to control packets based on existing sessions

• URL filtering

Blocks unsafe websites and protects network based on URL information

• Content filtering

Blocks websites and protects network based on keyword match done on the content in the webpage

- Network access control

  MAC address and IP address-based network access control. IP/MAC binding

- IEEE 802.1X authentication and RADIUS login

  Authenticate wireless clients based on 802.1X protocol using a Radius server

- Denial of Service (DoS) prevention

  Detects and blocks commonly used DoS attacks that can be initiated on the devices. Common attack signatures are stored in the device

- Application Level Gateway (SIP/H323)

  Discovers the IP address and service port information embedded in the application data using deep packet inspection in the firewall; firewall then dynamically opens appropriate connections for specific applications

- Secure management

  MAC/IP based administrator authentication, secure WAN/LAN access to management interface, encrypt management traffic using HTTPS

- HTTPS management

  Provides secure Web management

- Management password

  Provides security so that only authorized access to the Web Management interface is allowed

Virtual private network (VPN)

- IPsec

  Provides secure tunneling over an untrusted network such as the Internet or a wireless network; offers data confidentiality, authenticity, and integrity between two network endpoints

- Layer 2 Tunneling Protocol (L2TP)

  An industry-standard-based traffic encapsulation mechanism supported by many common OSs; will tunnel the point-to-point Protocol (PPP) traffic over the IP and non-IP networks; may use the IP/UDP transport mechanism in IP networks

- Network Address Translation-Traversal (NAT-T)

  Enables IPsec-protected IP datagrams to pass through a network address translator (NAT)

- Point-to-Point Tunneling Protocol (PPTP)

  An industry-standard-based traffic encapsulation mechanism for VPN tunnels supported by many common OSs; PPTP uses a control channel over TCP and a GRE tunnel operating to encapsulate PPP packets

• Site-to-site VPN tunnel

Configures VPN gateways on routers to provide secure site-to-site communication between offices, partners, or remote workers; tunnels can be set using IPsec, PPTP, or L2TP over IPsec protocols

• Client mode VPN tunnel

Supports native VPN client based on Windows® and MAC OS

• VPN pass through

Supports VPN pass through of PPTP, L2TP, and IPsec tunnels

Management

• Network Time Protocol (NTP)

Synchronizes timekeeping among distributed time servers and clients; keeps timekeeping consistent among all clock-dependent devices within the network so that the devices can provide diverse applications based on the consistent time

• Secure Web GUI

Provides a secure, easy-to-use graphical interface for configuring the module via HTTPS

• Event logging

Supports local logging as well as remote syslog server

• Email alerts

Device can be configured to send email alerts to preconfigured email address

• USB support

Supports file transfer from compatible USB devices. Supports Samba and FTP server

• SNMP v1, v2c

Supports limited SNMP management capability

• Firmware upgrade

Supports firmware upgrade via HTTP/HTTPS. Also supports configuration file import/export through Web interface

• Traffic statistics

Monitor traffic statistics on device interfaces, SSID, and client level

• Tools

Troubleshooting tools, such as Support file generation, ping, traceroute, nslookup, etc.

• Time-based rules

Simplifies network management by setting time- based rules on device features, such as wireless radio, security filters, etc.

Layer 2 switching

• Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) protocol snooping controls and manages the flooding of multicast packets in a layer 2 network

• IEEE 802.1D Spanning Tree Protocol (STP)

  Provides redundant links while preventing network loops

• IEEE 802.1w Rapid Convergence Spanning Tree Protocol (RSTP)

  Increases network uptime through faster recovery from failed links

• Auto MDI/MDIX

  Provides automatic adjustments for straight through or crossover cables on all 10/100/1000 ports

• VLAN (IEEE 802.1Q)

  Supports one tagged VLAN per LAN port. Helps segregate traffic on LAN ports to virtual groups

Layer 3 services

• Address Resolution Protocol (ARP)

  Determines the MAC address of another IP host in the same subnet; supports static ARPs; gratuitous ARP allows detection of duplicate IP addresses; proxy ARP allows normal ARP operation between subnets or when subnets are separated by a layer 2 network

• Dynamic Host Configuration Protocol (DHCP)

  Simplifies the management of large IP networks and supports client and server; DHCP relay enables DHCP operation across subnets

• IPv6

  Dual stack (IPv4/IPv6): transitions from IPv4 to IPv6, supporting connectivity for both protocols—MLD snooping: forwards IPv6 multicast traffic to the appropriate interface, preventing traffic flooding—IPv6 ready: switch hardware can support IPv6 routing

• Network Address Translation (NAT) and Port Address Translation (PAT)

  Preserves a network's IP address pool or conceals the private address of network resources such as Web servers, which are made accessible to users of a guest or public wireless LAN; provides choice of dynamic or static translation

• DHCP server

  Multi-scope DHCP server hands out IPv4 and/or IPv6 addresses to client devices

• DMZ support

  Allows users to open a local client for unrestricted two way access, especially if that client cannot run an Internet application properly from behind the NAT firewall

• Dynamic DNS (DDNS)

  Supports DDNS feature that allows customers to access a dynamic address with a fixed domain name

Layer 3 routing
• Static routes

  Ability to manually configure IPv4 and IPv6 routes

• RIPv1, v2, ng

  Dynamically routes IPv4 and IPv6 packets between different subnets using RIP protocol

QoS
• Traffic prioritization (DSCP)

  Prioritizes traffic based on layer 3 header in IP packets. Helps prioritize time-sensitive traffic like voice and video

• Traffic prioritization (IEEE 802.1p)

  Traffic prioritization based on layer 2 packet headers. Allows real-time traffic like voice and video to be prioritized

• IEEE 802.11e

  IEEE 802.11e Wi-Fi Multimedia (WMM) wireless QoS standard—when combined with wired QoS policies—provides end-to-end QoS, delivering different wireless channel competitiveness for different services

• Queue

  Device capable of segregating traffic into 4 priority queues to enable more granular traffic prioritization. This ensures consistent performance for high priority traffic, even during periods of network congestion

• Traffic shaping

  Enable configuration of bandwidth limit to traffic per queue

• Traffic remarking

  Allows remarking of IEEE 802.1p and DSCP traffic priority

• Queue mapping

  Allows mapping of traffic to queue based on MAC address, IP address, traffic type, and certain commonly used services

Ease of use
- Aesthetics

  Embedded antennas expand installation options and increase aesthetics

- Easy to use

  GUI-driven central management and configuration

- Fanless design

  Enables quiet operation for deployment in open spaces

- Flexible mounting

  Supports desktop as well as wall mount operation

Warranty and support
- 3-year Warranty 2.0

  Advance hardware replacement with next-business-day delivery (available in most countries)

- Electronic and telephone support (for Warranty 2.0)

  Limited electronic and 24x7 telephone support is available from HP for the entire warranty period; to reach our support centers, refer to hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, refer to hp.com/networking/warrantysummary

- Software releases

  To find software for your product, refer to hp.com/networking/support; for details on the software releases available with your product purchase, refer to hp.com/networking/warrantysummary
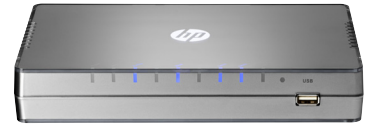
HP R100 Wireless VPN Router Series

Specifications

	HP R110 Wireless 11n VPN WW Router (J9975A)	HP R110 Wireless 11n VPN AM Router (J9974A)
I/O ports and slots	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports
AP characteristics		
Radios (built-in)	802.11a/b/g/n	802.11a/b/g/n
Radio operation modes	Client access, Client bridge	Client access, Client bridge
AP operation modes	Autonomous	Autonomous
Wi-Fi Alliance Certification	a/b/g/n Wi-Fi Certified	a/b/g/n Wi-Fi Certified
Physical characteristics		
Dimensions	8.5(w) x 5.5(d) x 1.5(h) in (21.59 x 13.97 x 3.81 cm)	8.5(w) x 5.5(d) x 1.5(h) in (21.59 x 13.97 x 3.81 cm)
Weight	1 lb (0.45 kg)	1 lb (0.45 kg)
Memory and processor	MIPS @ 700 MHz, 128 MB NAND flash	MIPS @ 700 MHz, 128 MB NAND flash
Mounting and enclosure	Desktop/wall-mount	Desktop/wall-mount
Performance		
MAC address table size	2048 entries	2048 entries
VPN throughput	up to 30Mbps	up to 30Mbps
Dedicated IPsec VPN tunnels	5	5
Network throughput	920Mbps (NAT)	920Mbps (NAT)
Concurrent sessions	5	5
Number of VLANs	4	4
Environment		
Operating temperature	32°F to 104°F (0°C to 40°C)	32°F to 104°F (0°C to 40°C)
Operating relative humidity	5% to 95%, noncondensing	5% to 95%, noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Altitude	up to 10,000 ft (3 km)	up to 10,000 ft (3 km)
Notes	No Fan	No Fan
Electrical characteristics		
AC voltage	100 - 240 VAC	100 - 240 VAC
Maximum power rating	9.5 W	9.5 W
Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. 12V DC power adaptor	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. 12V DC power adaptor
Reliability		
MTBF (years)	51.54	51.54

	HP R110 Wireless 11n VPN WW Router (J9975A)	HP R110 Wireless 11n VPN AM Router (J9974A)
Safety	UL 60950-1; CAN/CSA 22.2 No. 60950-1; EN 60950-1	UL 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1
Emissions	EN 55022 Class B; EN 301 489-1; EN 301 489-17	ICES-003 Class B; FCC Part 15 Class B
Radio	EN 300 328; EN 301 893	FCC Part 15.247; FCC Part 15.407; RSS-210
RF exposure	EN 62311	FCC Bulletin OET-65C; RSS-102
Frequency Bands and Operating Channels FCC		• 2.412 - 2.462 GHz (1 - 11 channels • 5.180 - 5.240 GHz (36 - 48 channels) • 5.745 - 5.825 GHz (149 - 165 channels)
European Union	• 2.412 - 2.472 GHz (1 - 13 channels) • 5.180 - 5.240 GHz (36 - 48 channels) • 5.260 - 5.320 GHz (52 - 64 channels) • 5.500 - 5.700 GHz (100 - 140 channels), excluding 5600-5650 MHz	
Rest of World (Actual channels designated by selecting country in UI)	• 2.412 - 2.472 GHz (1 - 13 channels) • 5.180 - 5.320 GHz (36 - 64 channels) • 5.500 - 5.700 GHz (100 - 144 channels); excluding 5600-5650 MHz • 5.745 - 5.825 GHz (149 - 165 channels)	
Taiwan	• 2.412 - 2.462 GHz (1 - 11 channels) • 5.280 - 5.320 GHz (56 - 64 channels) • 5.500 - 5.700 GHz (100 - 144 channels); excluding 5600-5650 MHz • 5.745 - 5.825 GHz (149 - 165 channels)	

Transmit Power	• 2.4Ghz
	  802.11b 11dbm +/-2dBm
	  802.11g 13dBm +/-2dBm
	  802.11n HT20 13dBm +/-2dBm
	  802.11n HT40 13dBm +/-2dBm
	• 5Ghz
	  802.11a 22dBm +/-2dBm
	  802.11n HT20 21dBm +/-2dBm
	  802.11n HT40 20dBm +/-2dBm
	• Maximum transmit power varies by country
		• 2.4Ghz
		  802.11b 19dbm +/-2dBm
		  802.11g 22dBm +/-2dBm
		  802.11n HT20 23dBm +/-2dBm
		  802.11n HT40 19dBm +/-2dBm
		• 5Ghz
		  802.11a 22dBm +/-2dBm
		  802.11n HT20 21dBm +/-2dBm
		  802.11n HT40 21dBm +/-2dBm
		• Maximum transmit power varies by country

Receiver Sensitivity	802.11b:-78dBm@11Mbps 802.11g:-73dBm@54Mbps 802.11n(2.4Ghz):-66dBm@450Mbps 802.11a:-72dBm@54Mbps, 802.11n(5Ghz):-65dBm@450Mbps	802.11b:-78dBm@11Mbps 802.11g:-73dBm@54Mbps 802.11n(2.4Ghz):-66dBm@450Mbps 802.11a:-72dBm@54Mbps, 802.11n(5Ghz):-65dBm@450Mbps
Notes	Regulatory Model Number: MRLBB-1401	Regulatory Model Number: MRLBB-1401
Management	IMC—Intelligent Management Center; Web browser	IMC—Intelligent Management Center; Web browser
Services	Refer to the HP website at hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	Refer to the HP website at hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP R100 Wireless VPN Router Series

Specifications (continued)

	HP R120 Wireless 11ac VPN WW Router (J9977A)	HP R120 Wireless 11ac VPN AM Router (J9976A)
I/O ports and slots	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports
AP characteristics		
Radios (built-in)	802.11a/b/g/n/ac	802.11a/b/g/n/ac
Radio operation modes	Client access, Client bridge	Client access, Client bridge
AP operation modes	Autonomous	Autonomous
Wi-Fi Alliance Certification	a/b/g/n/ac Wi-Fi Certified	a/b/g/n/ac Wi-Fi Certified
Physical characteristics		
Dimensions	8.5(w) x 5.5(d) x 1.5(h) in (21.59 x 13.97 x 3.81 cm)	8.5(w) x 5.5(d) x 1.5(h) in (21.59 x 13.97 x 3.81 cm)
Weight	1.28 lb (0.58 kg)	1.28 lb (0.58 kg)
Memory and processor	MIPS @ 1 GHz, 128 MB NAND flash	MIPS @ 1 GHz, 128 MB NAND flash
Mounting and enclosure	Desktop/wall-mount	Desktop/wall-mount
Performance		
MAC address table size	2048 entries	2048 entries
VPN throughput	up to 30Mbps	up to 30Mbps
Dedicated IPsec VPN tunnels	5	5
Network throughput	920Mbps (NAT)	920Mbps (NAT)
Concurrent sessions	5	5
Number of VLANs	4	4
Environment		
Operating temperature	32°F to 104°F (0°C to 40°C)	32°F to 104°F (0°C to 40°C)
Operating relative humidity	5% to 95%, noncondensing	5% to 95%, noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Altitude	up to 10,000 ft (3 km)	up to 10,000 ft (3 km)
Notes	No Fan	No Fan
Electrical characteristics		
AC voltage	100 - 240 VAC	100 - 240 VAC
Maximum power rating	15 W	15 W
Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. 12V DC power adaptor	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. 12V DC power adaptor
Reliability		
MTBF (years)	41.84	41.84
Safety	UL 60950-1; CAN/CSA 22.2 No. 60950-1; EN 60950-1	UL 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1

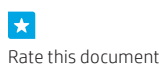|	HP R120 Wireless 11ac VPN WW Router (J9977A)	HP R120 Wireless 11ac VPN AM Router (J9976A)
Emissions	EN 55022 Class B; EN 301 489-1; EN 301 489-17	ICES-003 Class B; FCC Part 15; Class B
Radio	EN 300 328; EN 301 893	FCC Part 15.247; FCC Part 15.407; RSS-210
RF exposure	EN 62311	FCC Bulletin OET-65C; RSS-102
Frequency Bands and Operating Channels FCC		• 2.412 - 2.462 GHz (1 - 11 channels • 5.180 - 5.240 GHz (36 - 48 channels) • 5.745 - 5.825 GHz (149 - 165 channels)
European Union	• 2.412 - 2.472 GHz (1 - 13 channels) • 5.180 - 5.240 GHz (36 - 48 channels) • 5.260 - 5.320 GHz (52 - 64 channels) • 5.500 - 5.700 GHz (100 - 140 channels), excluding 5600-5650 MHz	
Rest of World (Actual channels designated by selecting country in UI)	• 2.412 - 2.472 GHz (1 - 13 channels) • 5.180 - 5.320 GHz (36 - 64 channels) • 5.500 - 5.700 GHz (100 - 144 channels); excluding 5600-5650 MHz • 5.745 - 5.825 GHz (149 - 165 channels)	
Taiwan	• 2.412 - 2.462 GHz (1 - 11 channels) • 5.280 - 5.320 GHz (56 - 64 channels) • 5.500 - 5.700 GHz (100 - 144 channels); excluding 5600-5650 MHz • 5.745 - 5.825 GHz (149 - 165 channels)	

Transmit Power	• 2.4Ghz
	  802.11b 13dbm +/-2dBm
	  802.11g 13dBm +/-2dBm
	  802.11n HT20 13dBm+/-2dBm
	  802.11n HT40 13dBm +/-2dBm
	• 5Ghz
	  802.11a 21dBm +/-2dBm
	  802.11n/802.11ac HT20/VHT20 21dBm +/-2dBm,
	  802.11n/802.11ac HT40/VHT40 21dBm +/-2dBm
	  802.11ac VHT80 21dBm +/-2dBm
	• Maximum Transmit power varies by country
		• 2.4Ghz
		  802.11b 23dbm +/-2dBm
		  802.11g 22dBm +/-2dBm
		  802.11n HT20 22dBm+/-2dBm
		  802.11n HT40 17dBm +/-2dBm
		• 5Ghz
		  802.11a 21dBm +/-2dBm
		  802.11n/802.11ac HT20/VHT20 21dBm +/-2dBm,
		  802.11n/802.11ac HT40/VHT40 21dBm +/-2dBm
		  802.11ac VHT80 15dBm +/-2dBm
		• Maximum Transmit power varies by country

Receiver Sensitivity	802.11b:-88dBm@11Mbps 802.11g:-72dBm@54Mbps 802.11n (2.4Ghz):-69dBm@450Mbps 802.11a:-76dBm@54Mbps, 802.11n(5Ghz):-71dBm@450Mbps 802.11ac:-61dBm@1300Mbps	802.11b:-88dBm@11Mbps 802.11g:-72dBm@54Mbps 802.11n (2.4Ghz):-69dBm@450Mbps 802.11a:-76dBm@54Mbps, 802.11n(5Ghz):-71dBm@450Mbps 802.11ac:-61dBm@1300Mbps
Notes	Regulatory Model: MRLBB-1404 Radio Module Model number: • MRLBB-1402 • MRLBB-1403	Regulatory Model: MRLBB-1404 Radio Module Model number: • MRLBB-1402 • MRLBB-1403
Management	IMC—Intelligent Management Center; Web browser	IMC—Intelligent Management Center; Web browser

	HP R120 Wireless 11ac VPN WW Router (J9977A)	HP R120 Wireless 11ac VPN AM Router (J9976A)
Services	Refer to the HP website at hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	Refer to the HP website at hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Standards and Protocols
(applies to all products in series)

Denial of service protection		Automatic Filtering of well-known Denial of Service Packets	
Device management	RFC 1157 SNMPv1/v2c	Web UI	
General protocols	IEEE 802.11a/b/g Wireless Protocol IEEE 802.1D Spanning Tree Protocol IEEE 802.1p Priority IEEE 802.1Q VLANs	IEEE 802.1W Rapid Spanning Tree Protocol IEEE 802.3 Type 10BASE-T IEEE 802.3ab 1000BASE-T RFC 1631 NAT RFC 1723 RIP v2	RFC 2131 DHCP RFC 2236 IGMP Snooping RFC 2637 Point-to-Point Tunneling Protocol (PPTP) RFC 2661 L2TP
IPv6		RFC 2080 RIPng for IPv6	
Mobility	IEEE 802.11a High Speed Physical Layer in the 5 GHz Band IEEE 802.11ac WLAN Enhancements for Very High Throughput	IEEE 802.11b Higher-Speed Physical Layer Extension in the 2.4 GHz Band IEEE 802.11e QoS enhancements	IEEE 802.11g Further Higher Data Rate Extension in the 2.4 GHz Band IEEE 802.11n WLAN Enhancements for Higher Throughput
QoS/CoS	IEEE 802.1P (CoS)	RFC 2474 DSCP DiffServ	RFC 2474, with 4 queues per port Wi-Fi MultiMedia (WMM), IEEE 802.11e
Security	WPA (Wi-Fi Protected Access)	WPA (Wi-Fi Protected Access)/WPA2	

Learn more at
hp.com/networking

HP access points and access devices are Wi-Fi Certified, providing our customers with the assurance that these products have met and passed the rigorous interoperability testing performed by the Wi-Fi Alliance Organization. See the Specifications section of this series for more information.

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