ZoneFlex H510
Multiservice 802.11ac Wave 2 Wired/Wireless Wall Switch

Ruckus™
Simply Better Wireless.

DATA SHEET

BENEFITS

WAVE 2 MU-MIMO

Network performance improved by transmitting to multiple clients at the same instant.

CONVERGED IP SERVICES

Multiple SSIDs, port-based VLANs and four Gigabit Ethernet access ports make the ZoneFlex H510 ideal for supporting concurrent IP-based services such as VoIP, IPTV, high-speed Internet access and in-room device connectivity — both wired and wireless

ADDITIVE PERFORMANCE WITH BEAMFLEX+

BeamFlex+ adaptive antennas improve Wi-Fi signal quality by adapting to device location and orientation, which is ideal for better performance on handheld mobile devices

MODULAR SUPPORT

The H510 has been designed to accommodate snap-on modules for a variety of applications including connectivity beyond Wi-Fi

STANDALONE OR CENTRALLY MANAGED

The ZoneFlex H510 can be deployed in standalone mode or centrally managed by the Ruckus ZoneDirector, SmartZone, or Ruckus FlexMaster systems

FLEXIBLE DEPLOYMENT OPTIONS

The ZoneFlex H510 requires a single cable drop and operates under standard 802.3af PoE, reducing cabling, switch ports and power sourcing equipment

SLEEK, INCONSPICUOUS COMPACT FORM FACTOR FOR BEST AESTHETICS

Installs into any standard electrical outlet box creating a low profile, secure design and front port access which eliminates unsightly cabling and disruptive furniture placement

INTEGRATED POE SUPPORT ELIMINATES MORE WIRES

POE out to power devices such as IP-based VoIP phones eliminates the need for more power cords and clutter

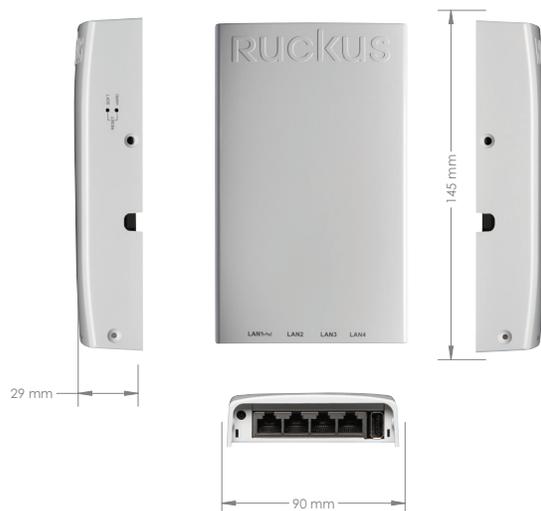## HIGH PERFORMANCE 802.11AC WAVE 2 INTEGRATED WIRED/WIRELESS WALL SWITCH

The ZoneFlex™ H510 is the industry's first Wave 2 802.11ac wired and wireless wall switch using Ruckus' patented BeamFlex+ adaptive antenna technology to deliver high-speed 802.11ac Wi-Fi in an ultra-sleek, low-profile design that can be discretely installed over a standard electrical junction box. Ideal for offering converged services in hotel guest rooms, student residences, and multi-dwelling units, the ZoneFlex H510 provides an easy way to offer multiple connections in a single room without multiple cables.

The ZoneFlex H510 supports Multi-User MIMO (MU-MIMO) as a Wave 2 solution and can increase network throughput by transmitting to two Wave 2 clients at the same instant in time. This efficient utilization of the Wi-Fi channel boosts performance for Wave 2 clients but also frees up airtime for all clients, which means even non-Wave 2 clients see a performance benefit.

The "mobile device ready" ZoneFlex H510 with BeamFlex+ adapts in real time to client device location and physical orientation, delivering consistent Wi-Fi performance. The BeamFlex+ adaptive antenna system of the ZoneFlex H510 is optimized to deliver best-in-class Wi-Fi coverage and performance in hotel guest rooms and MDU residences.

Equipped with four Ethernet ports for in-room access, the ZoneFlex H510 can be used to connect a range of wired network devices such as IPTV set top boxes, IP telephones, or networked minibars while simultaneously providing dual band 802.11ac wireless LAN coverage. An IEEE 802.3af-compliant Power-over-Ethernet (PoE) port on the H510 allows devices such as IP telephones to be powered directly from the wall switch. The H510 itself may be powered via standard PoE or a DC power adapter.

The ZoneFlex H510 offers maximum flexibility and future-proofed utility. It is designed to securely support future add-on radio modules for wireless connectivity beyond best-in-class Wi-Fi. The cable pathways at the rear, support legacy cabling such as RG6 or CAT3/CAT5. Existing services such as video and voice over Ethernet can co-exist within the same junction box, reducing both installation time and construction costs. The H510 can be deployed as a standalone device or centrally managed by SmartZone, ZoneDirector, or FlexMaster management platforms.
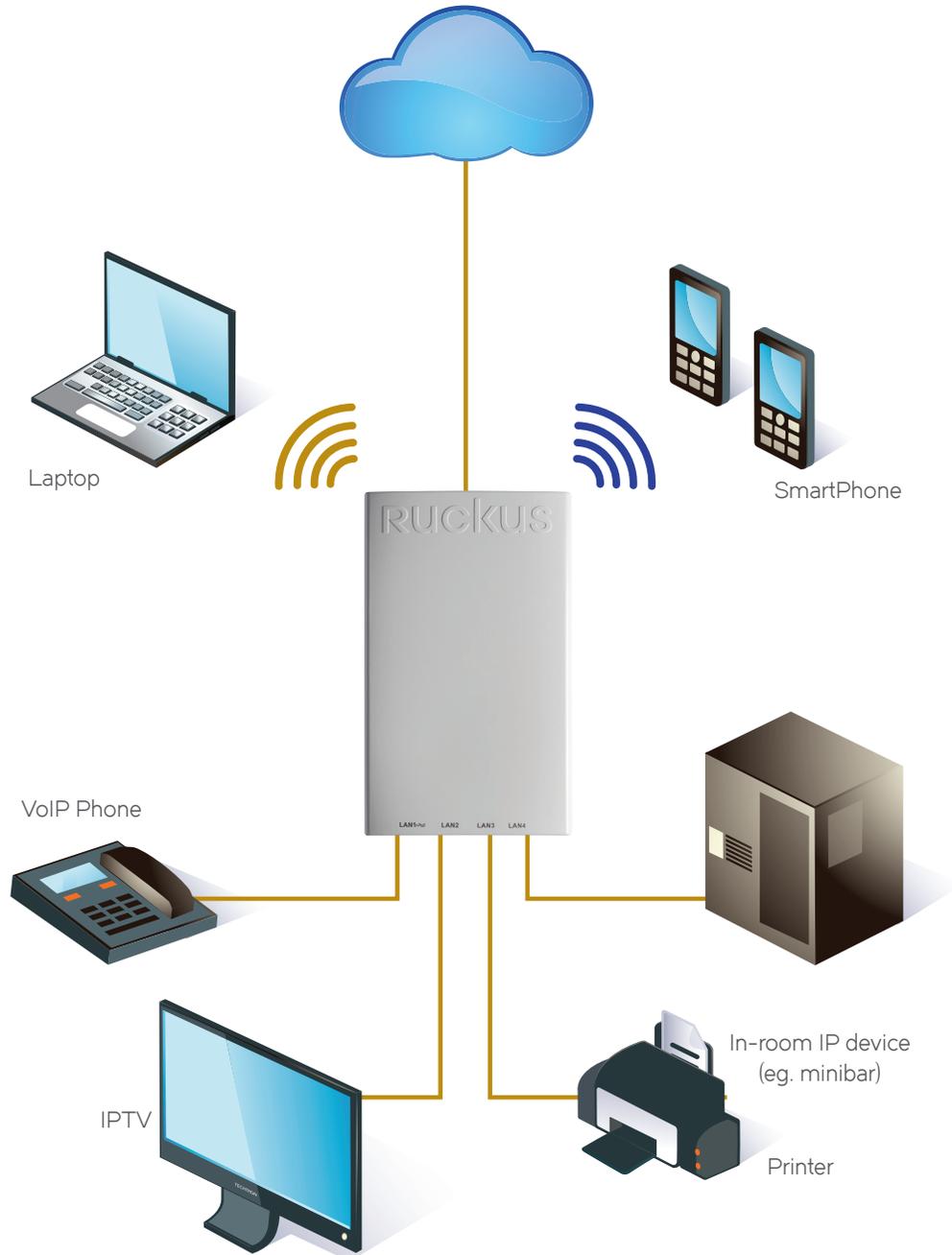
FEATURES

- Integrated dual radio 2x2 802.11ac Wav 2 Wi-Fi AP and Ethernet wall switch supporting Multi-User MIMO (MU-MIMO)

- Ruckus patented BeamFlex+ adaptive antennas optimized for in-room performance and mobile clients

- Matched Band Coverage ensures similar Wi-Fi coverage for both 2.4 and 5 GHz client devices

- Modular options for add-on radios

- Powered by either PoE or 48VDC

- Supplies PoE power for in-room devices such as VoIP phones

- SmartCast QoS

- Multiple BSSIDs per radio with unique QoS and security policies

- WPA-PSK, WPA-TKIP, WPA2 AES, 802.11i

- 802.1X support for RADIUS and Active Directory*

- Dynamic PSK*

- Application recognition and control*

- Mounts over a standard US and EU single gang wall jack

- RJ-45 for uplink Ethernet port

- Cable channel for preserving legacy infrastructure (e.g. PBX phones)

- SmartMesh Networking*

* with management

CONVERGED WIRED AND WIRELESS SERVICES

Laptop

SmartPhone

RUCKUS

LAN1-PoE   LAN2   LAN3   LAN4

VoIP Phone

In-room IP device
(eg. minibar)

IPTV

Printer

PHYSICAL CHARACTERISTICS

Power	• POE 802.3af/802.3at • 48VDC input
Physical Size	• 90 mm x 145 mm x 29 mm
Weight	• 230 g • 292 g with bracket
Physical Ports	• 4 10/100/1000 Mbps Base-T 802.3, 802.3u, RJ-45 Ethernet access ports. • 1 10/100/1000 Mpbs Base-T 802.3, 802.3u, 802.3ab, 802.3af (802.3at class 4) PoE input, RJ-45 • USB 2.0
Mounting Options	• Electrical wallbox; Standard US and EU single gang wall jack • Optional bracket for offset & wall mount
Environmental Conditions	• Operating Temperature: 32°F (0°C) - 104°F (40°C) • Operating Humidity: 15% - 95% non-condensing
Power Draw	• Idle: 6.5 W • Typical: 7.3 W • Peak, no PoE out load: 9.2W Max load on PoE out: • 4W with 802.3af for PoE • 12.95W with 802.3at PoE in

RF

Minimum Rx Sensitivity	• Up to -99dBm
Beamflex* Sinr Tx Gain	• 2dB
Beamflex* Sinr Rx Gain	• 3-5dB (PD-MRC)
Interference Mitigation	• 5dB

* BeamFlex gains are statistical system level effects translated to enhanced SINR based on observations over time in real-world conditions with multiple APs and many clients

PERFORMANCE AND CAPACITY

Concurrent users	• 100
Voice Calls	• 30
BSSID	• 8 BSSIDs per radio

MULTIMEDIA AND QUALITY OF SERVICE

802.11e/WMM	• Supported
Software Queues	• Per traffic type (4), per client
Traffic Classification	• Automatic, heuristics and TOS based or VLAN-defined
Rate Limiting	• Dynamic, per-user or per-WLAN

NETWORK ARCHITECTURE

IP	• IPv4, IPv6, dual-stack
VLANs	• 802.1Q (1 per BSSID or dynamic, per user based on RADIUS) • Port-based
802.1X For Ethernet Ports	• Authenticator • Supplicant

MANAGEMENT

Deployment Options	• Standalone (individually managed) • Managed by ZoneDirector • Managed by SmartZone • Managed by FlexMaster
Configuration	• Web User Interface (HTTP/S) • CLI (Telnet/SSH), SNMP v1, 2, 3

WI-FI

Standards	• IEEE 802.11a/b/g/n/ac
Mimo Configuration	• 2 x 2 : 2 SU-MIMO • 2 x 2 : 2 MU-MIMO
Supported Data Rates	• 802.11n/ac: 6.5Mbps – 173.4Mbps (20MHz) • 13.5Mbps – 400Mbps (40MHz) • 29.3Mbps – 867Mbps (80MHz) • 802.11a: 54, 48, 36, 24, 18, 12, 9 and 6Mbps • 802.11b: 11, 5.5, 2 and 1 Mbps • 802.11g: 54, 48, 36, 24, 18, 12, 9 and 6 Mbps
Rf Power Output* (Aggregate)	• 2.4 GHz: 18dBm • 5.0 GHz: 22dBm
Channelization	• 20MHz, 40MHz, 80MHz
Frequency Band	• IEEE 802.11 b/g/n: 2.4 – 2.484 GHz • IEEE 802.11a/ac: 5.15 – 5.25 GHz; 5.25 – 5.35 GHz; 5.47 – 5.725 GHz; 5.725 – 5.85 GHz
Operating Channels	• 2.4GHz : 1-13 • 5GHz : 36-64, 100-140, 149-165 • Channel availability is country dependent according to the local regulations
Wireless Security	• WPA-PSK, WPA-TKIP, WPA2 AES, 802.11i • Authentication via 802.1X with ZoneDirector, local authentication database, support for RADIUS, LDAP, and Active Directory

* Maximum power varies by country
**See price list for latest country certifications

PRODUCT ORDERING INFORMATION

MODEL	DESCRIPTION
ZoneFlex H510 Wi-Fi Wall Switch	
901-H510-XX00	Dual band Wave 2 802.11ac Wi-Fi Wall Switch
Optional Accessories	
902-0170-XX0	• Power Supply (Qty. 1)
902-0162-XX00	• PoE injector (Qty. 1)
902-0126-0000	• Optional Surface-mount bracket

PLEASE NOTE: When ordering ZoneFlex Indoor APs, you must specify the destination region by indicating –US, –WW, or –Z2 instead of XX. When ordering PoE injectors or power supplies, you must specify the destination region by indicating –US, –EU, –AU, –BR, –CN, –IN, –JP, –KR, –SA, –UK, or –UN instead of –XX.

For access points, –Z2 applies to the following countries: Algeria, Egypt, Israel, Morocco, Tunisia, and Vietnam

Warranty: Sold with a limited lifetime warranty.
For details see: http://support.ruckuswireless.com/warranty

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