

# ZoneFlex H510

Multiservice 802.11ac Wave 2 Wired/Wireless Wall Switch



## 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

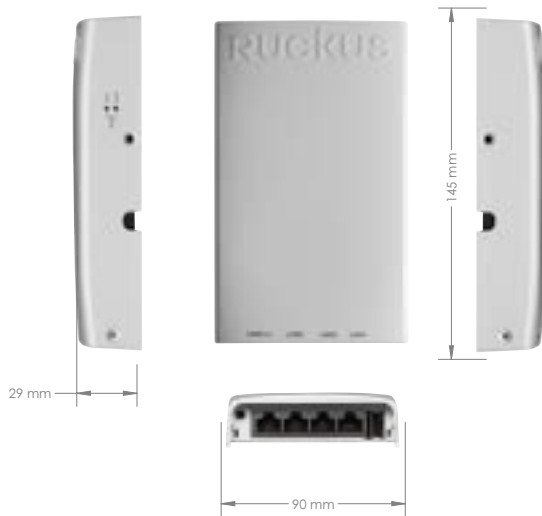
The ZoneFlex™ H510 is the industry's first Wave 2 802.11ac wired and wireless wall switch using Ruckus' patented BeamFlex+ adaptive antenna technology to deliver high-speed 802.11ac Wi-Fi in an ultra-sleek, low-profile design that can be discretely installed over a standard electrical junction box. Ideal 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.

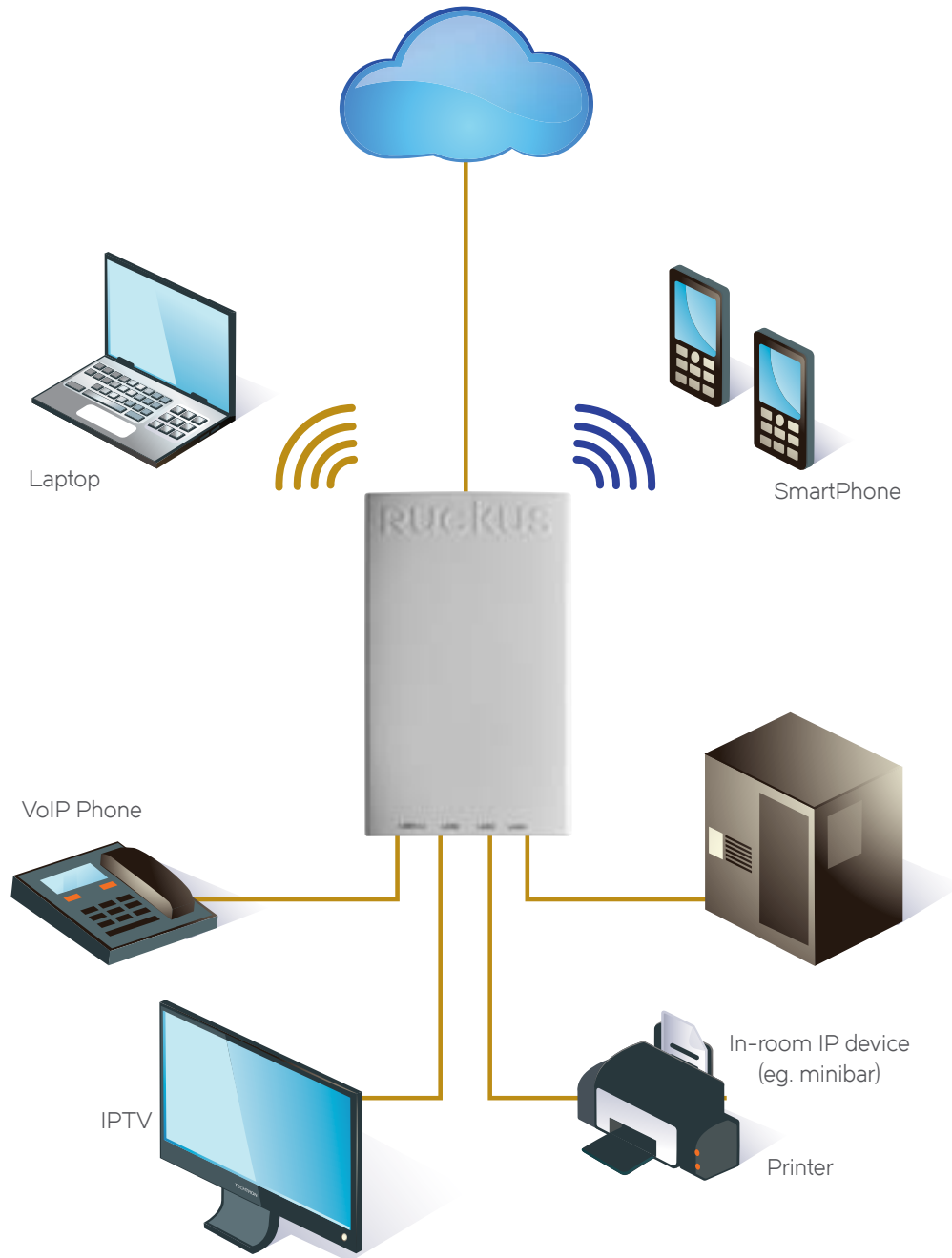


### FEATURES

- Integrated dual radio 2x2 802.11ac Wave 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



### PHYSICAL CHARACTERISTICS

<b>Power</b>	<ul style="list-style-type: none"> <li>POE 802.3af/802.3at</li> <li>48VDC input</li> </ul>
<b>Physical Size</b>	<ul style="list-style-type: none"> <li>90 mm x 145 mm x 29 mm</li> </ul>
<b>Weight</b>	<ul style="list-style-type: none"> <li>230 g</li> <li>292 g with bracket</li> </ul>
<b>Physical Ports</b>	<ul style="list-style-type: none"> <li>4 10/100/1000 Mbps Base-T 802.3, 802.3u, RJ-45 Ethernet access ports.</li> <li>110/100/1000 Mbps Base-T 802.3, 802.3u, 802.3ab, 802.3af (802.3at class 4) PoE input, RJ-45</li> <li>USB 2.0</li> </ul>
<b>Mounting Options</b>	<ul style="list-style-type: none"> <li>Electrical wallbox; Standard US and EU single gang wall jack</li> <li>Optional bracket for offset &amp; wall mount</li> </ul>
<b>Environmental Conditions</b>	<ul style="list-style-type: none"> <li>Operating Temperature: 32°F (0°C) - 104°F (40°C)</li> <li>Operating Humidity: 15% - 95% non-condensing</li> </ul>
<b>Power Draw</b>	<ul style="list-style-type: none"> <li>Idle: 6.5 W</li> <li>Typical: 7.3 W</li> <li>Peak, no PoE out load: 9.2W</li> </ul> <p>Max load on PoE out:</p> <ul style="list-style-type: none"> <li>4W with 802.3af for PoE</li> <li>12.95W with 802.3at PoE in</li> </ul>

### RF

<b>Minimum Rx Sensitivity</b>	<ul style="list-style-type: none"> <li>Up to -99dBm</li> </ul>
<b>Beamflex* Sinr Tx Gain</b>	<ul style="list-style-type: none"> <li>2dB</li> </ul>
<b>Beamflex* Sinr Rx Gain</b>	<ul style="list-style-type: none"> <li>3-5dB (PD-MRC)</li> </ul>
<b>Interference Mitigation</b>	<ul style="list-style-type: none"> <li>5dB</li> </ul>

\* 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

<b>Concurrent users</b>	<ul style="list-style-type: none"> <li>100</li> </ul>
<b>Voice Calls</b>	<ul style="list-style-type: none"> <li>30</li> </ul>
<b>BSSID</b>	<ul style="list-style-type: none"> <li>8 BSSIDs per radio</li> </ul>

### MULTIMEDIA AND QUALITY OF SERVICE

<b>802.11e/WMM</b>	<ul style="list-style-type: none"> <li>Supported</li> </ul>
<b>Software Queues</b>	<ul style="list-style-type: none"> <li>Per traffic type (4), per client</li> </ul>
<b>Traffic Classification</b>	<ul style="list-style-type: none"> <li>Automatic, heuristics and TOS based or VLAN-defined</li> </ul>
<b>Rate Limiting</b>	<ul style="list-style-type: none"> <li>Dynamic, per-user or per-WLAN</li> </ul>

### NETWORK ARCHITECTURE

<b>IP</b>	<ul style="list-style-type: none"> <li>IPv4, IPv6, dual-stack</li> </ul>
<b>VLANs</b>	<ul style="list-style-type: none"> <li>802.1Q (1 per BSSID or dynamic, per user based on RADIUS)</li> <li>Port-based</li> </ul>

### NETWORK ARCHITECTURE

<b>802.1X For Ethernet Ports</b>	<ul style="list-style-type: none"> <li>Authenticator</li> <li>Supplicant</li> </ul>
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### MANAGEMENT

<b>Deployment Options</b>	<ul style="list-style-type: none"> <li>Standalone (individually managed)</li> <li>Managed by ZoneDirector</li> <li>Managed by SmartZone</li> <li>Managed by FlexMaster</li> </ul>
<b>Configuration</b>	<ul style="list-style-type: none"> <li>Web User Interface (HTTP/S)</li> <li>CLI (Telnet/SSH), SNMP v1, 2, 3</li> </ul>

### WI-FI

<b>Standards</b>	<ul style="list-style-type: none"> <li>IEEE 802.11a/b/g/n/ac</li> </ul>
<b>Mimo Configuration</b>	<ul style="list-style-type: none"> <li>2 x 2 : 2 SU-MIMO</li> <li>2 x 2 : 2 MU-MIMO</li> </ul>
<b>Supported Data Rates</b>	<ul style="list-style-type: none"> <li>802.11n/ac: 6.5Mbps - 173.4Mbps (20MHz)</li> <li>13.5Mbps - 400Mbps (40MHz)</li> <li>29.3Mbps - 867Mbps (80MHz)</li> <li>802.11a: 54, 48, 36, 24, 18, 12, 9 and 6Mbps</li> <li>802.11b: 11, 5.5, 2 and 1 Mbps</li> <li>802.11g: 54, 48, 36, 24, 18, 12, 9 and 6 Mbps</li> </ul>
<b>Rf Power Output* (Aggregate)</b>	<ul style="list-style-type: none"> <li>2.4 GHz: 18dBm</li> <li>5.0 GHz: 22dBm</li> </ul>
<b>Channelization</b>	<ul style="list-style-type: none"> <li>20MHz, 40MHz, 80MHz</li> </ul>
<b>Frequency Band</b>	<ul style="list-style-type: none"> <li>IEEE 802.11 b/g/n: 2.4 - 2.484 GHz</li> <li>IEEE 802.11a/ac: 5.15 - 5.25 GHz; 5.25 - 5.35 GHz; 5.47 - 5.725 GHz; 5.725 - 5.85 GHz</li> </ul>
<b>Operating Channels</b>	<ul style="list-style-type: none"> <li>2.4GHz : 1-13</li> <li>5GHz : 36-64, 100-140, 149-165</li> <li>Channel availability is country dependent according to the local regulations</li> </ul>
<b>Wireless Security</b>	<ul style="list-style-type: none"> <li>WPA-PSK, WPA-TKIP, WPA2 AES, 802.11i</li> <li>Authentication via 802.1X with ZoneDirector, local authentication database, support for RADIUS, LDAP, and Active Directory</li> </ul>

\* 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
<b>Optional Accessories</b>	
902-0170-XX0	<ul style="list-style-type: none"> <li>Power Supply (Qty. 1)</li> </ul>
902-0162-XX00	<ul style="list-style-type: none"> <li>PoE injector (Qty. 1)</li> </ul>
902-0126-0000	<ul style="list-style-type: none"> <li>Optional Surface-mount bracket</li> </ul>