

## DATA SHEET



## BENEFITS

### MU-MIMO: IMPROVES NETWORK PERFORMANCE FOR ALL CLIENTS

This cutting edge Wi-Fi technology, gets you ready for the new 11ac Wave 2 mobile devices. It improves network efficiency & throughput for even non-Wave 2 clients

### HASSLE-FREE IOT READINESS

Ideal for enabling IoT technologies like BLE using the USB port

### EXTENDED RANGE REQUIRING FEWER APs

Adaptive antenna technology delivers up to 2x increase in Wi-Fi signal coverage minimizing the number of APs required to service any area

### SLEEK, LOW PROFILE ENCLOSURE FOR EASE-OF-DEPLOYMENT

Aesthetically-pleasing design and a range of mounting options

### CHANNEL SELECTION OPTIMIZES THROUGHPUT

ChannelFly dynamic channel management, based on throughput measurements, not just interference, chooses the best channel to give users the highest possible throughput

### SUPER SIMPLE CONFIGURATION AND MANAGEMENT

The industry's simplest configuration and management through a Web-based wizard and automated deployment capabilities

### FLEXIBLE DEPLOYMENT OPTIONS

Standalone or controller-based deployment

### ADAPTIVE POLARIZATION DIVERSITY (PD-MRC)

Dual-polarized antennas that are dynamically selected provide better reception for hard to hear clients and more consistent performance as clients constantly change orientation

### HASSLE-FREE MIGRATION TO HIGHER SPEED WI-FI

Support for standard 802.3af power over Ethernet allows enterprises to use existing PoE switches without costly upgrades

## HIGH PERFORMANCE, 802.11AC WAVE 2 MID-RANGE SMART WI-FI ACCESS POINTS WITH ADAPTIVE ANTENNA TECHNOLOGY

The Ruckus ZoneFlex R510 delivers high-performance and reliable 802.11ac wireless networking with MU-MIMO (Multi-User Multiple-Input Multiple-Output) capability. MU-MIMO helps boost network throughput by serving multiple clients simultaneously and also benefiting non-Wave 2 clients, thus improving overall network performance.

The R510, through its USB port, also enables IoT readiness for technologies like BLE, which helps drive business efficiencies from both a revenue and cost perspective. It does this with existing 802.3af power, obviating the need for expensive, capital intensive switch upgrades.

Each ZoneFlex R510 integrates Ruckus-patented BeamFlex+, a software-controlled, high gain antenna array that continually forms and directs each Wi-Fi packet over the best performing signal path.

Using dual-polarized antennas, the R510 adapts in real time to anticipate hand-held device movement and rotation ensuring consistent performance.

### MU-MIMO

MU-MIMO helps Wave 2 and non-Wave 2 clients. The R510 can communicate simultaneously to multiple Wave 2 clients increasing network performance. This frees up airtime for non-Wave 2 clients resulting in enhanced aggregate network throughput.

### ADVANCED WLAN APPLICATIONS

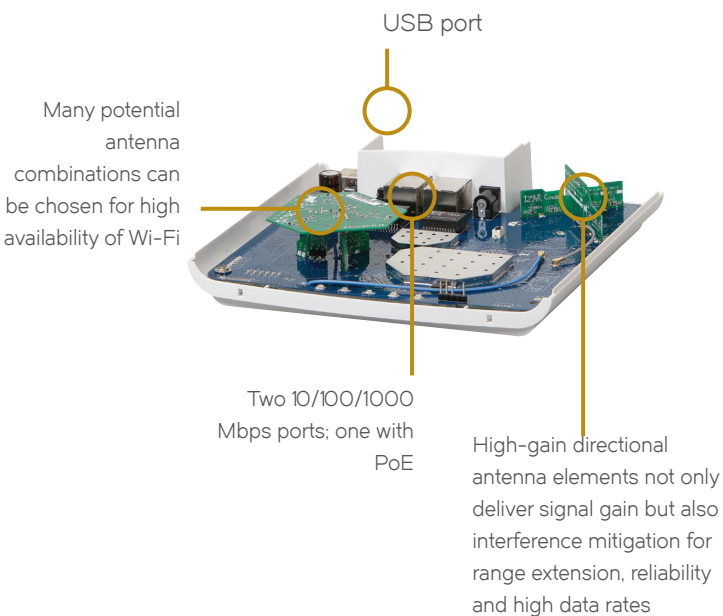
When used with the Ruckus WLAN controllers, each ZoneFlex R510 supports a wide range of value-added applications such as BYOD/guest onboarding, Dynamic PSK, hotspot authentication, wireless intrusion detection and many more. WLANs can be created and mapped to the same or different APs or VLANs. In a centrally managed configuration, the ZoneFlex R510 works with a wide range of authentication servers including Microsoft's Active Directory, LDAP, and RADIUS.

### FLEXIBLE DEPLOYMENT OPTIONS

ZoneFlex R510 APs can be deployed as a standalone AP or as part of a centrally managed wireless LAN using ZoneDirector or SmartZone Smart WLAN controllers. ZoneFlex R510 can be deployed across any L2/L3 network and can bridge traffic onto the local network, tunnel to a central location using L2TP\*\*, or route between the WAN and NAT'ed private subnets. With the Ruckus controllers, each ZoneFlex R510 is automatically configured through the network making deployment quick and easy.

### COMPLETE LOCAL AND REMOTE MANAGEMENT

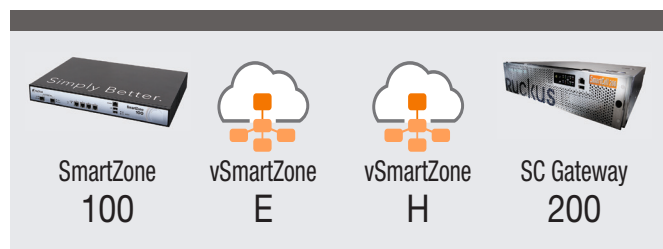
Each Zoneflex R510 can be managed by the ZoneDirector controller or the SmartZone controllers like SZ100, SCG200 or the vSZ. The controllers enable local management and control of APs, adding value-added services such as centralized AP provisioning, management and control at high scale.



### FEATURES

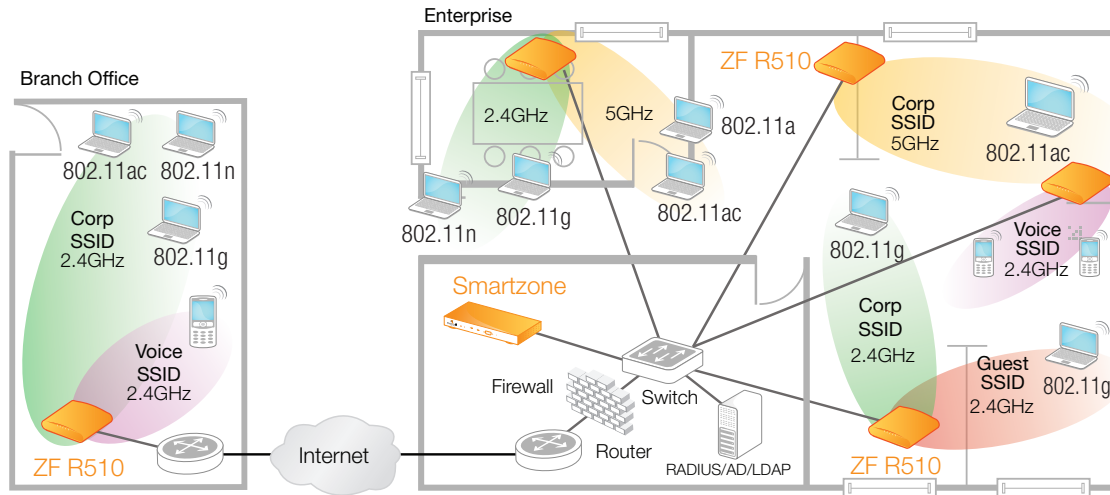
- 802.11ac Multi-User MIMO (MU-MIMO)
- Dual-band concurrent (5Ghz/2.4GHz)
- BeamFlex+ (PD-MRC) smart antenna, with support for 64 unique antenna patterns enables up to 4 dB of additional gain and up to 10 dB of additional interference mitigation
- Up to an additional 4dB BeamFlex gain / 10dB interference mitigation / 3 dBi physical antenna gain
- Automatic interference mitigation, optimized for high-density environments
- 802.11ac standard Tx Beamforming
- Standard 802.3af Power over Ethernet (PoE)
- Two 10/100/1000 Ethernet ports, one with 802.3af Power over Ethernet (PoE)
- USB Port for IoT technologies
- Router mode with NAT and DHCP services \*\*
- IP multicast video streaming support
- Advanced QoS packet classification and automatic priority for latency-sensitive traffic
- Dynamic, pre-user rate-limiting for hotspot WLANs
- WPA-PSK (AES), 802.1X support for RADIUS and Active Directory\*
- Ethernet 802.1x port-based authentication (authenticator and supplicant) \*\*
- Dynamic PSK\*
- Admission control/load balancing\*
- Band steering and airtime fairness support
- Captive portal and guest accounts\*
- Application recognition and control\*
- SmartWay Bonjour gateway\*
- SecureHotspot\*
- SPOT location services\*
- Band balancing\*
- SmartMesh\*
- \* when used with a controller platform
- \*\* only in standalone mode

\*\* when used with management



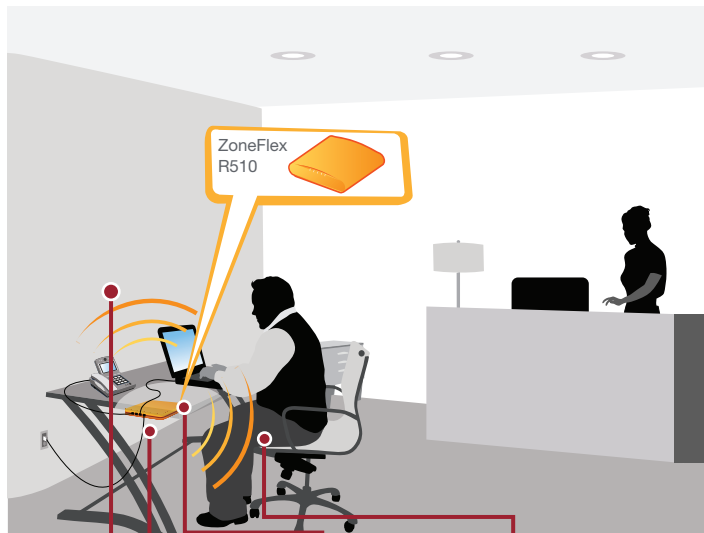
### THE ZONEFLEX R510 INTEGRATES WITH YOUR EXISTING NETWORK INFRASTRUCTURE

delivering best-in-class 802.11ac performance and reliability at a competitive price — making it the ideal wireless solution for mid-range enterprise and branch office applications.



### HOTEL COMMON AREAS SUCH AS SHARED OFFICES

The ZoneFlex R510 is ideal for deployment in hotel common areas to provide wireless connection to high quality data access, as well as wired connections to IP phone and guest devices.



Dual-band (2.4/5GHz) support allows for concurrent Internet and IP-based video services

Sleek, elegant design easily concealed

Wired ports for connecting IP devices such as laptops and VoIP phones

Multiple SSIDs for high-speed Internet access and other services

### DEPLOYMENT FOR RETAIL / BRANCH OFFICES

The ZoneFlex R510 is ideal for deployment in retail stores to provide inconspicuous wireless connection to high quality video, wireless IP phones and data access for handheld PoS bar code scanners.



Wired ports to connect devices such as cash registers, printers, etc.

Multiple SSIDs for differentiated user services (e.g., guest Wi-Fi, point of sale, voice)

5GHz band and smart antenna system ideal for 11ac clients  
Reliable Wi-Fi connectivity & IoT capabilities using technologies such as BLE

### Specifications\*

PHYSICAL CHARACTERISTICS	
Power	<ul style="list-style-type: none"> <li>DC Input: 12 VDC 1.0A</li> <li>Power over Ethernet 802.3 af</li> </ul>
Physical Size	<ul style="list-style-type: none"> <li>16.8 cm (L), 16.5 cm (W), 4.1 cm (H)</li> <li>6.6 in (L), 6.5 in (W), 1.6 in (H)</li> </ul>
Weight	<ul style="list-style-type: none"> <li>350gms (0.772 lbs)</li> </ul>
Ethernet Ports	<ul style="list-style-type: none"> <li>2 auto MDX, auto-sensing 10/100/1000 Mbps, RJ-45, POE port (on one port)</li> </ul>
Mounting Options	<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>
Lock Options	<ul style="list-style-type: none"> <li>Hidden latching mechanism</li> <li>Kensington Lock Hole</li> <li>T-bar Torx</li> <li>Bracket (902-0108-0000) Torx screw &amp; padlock (sold separately)</li> </ul>
Environmental Conditions	<ul style="list-style-type: none"> <li>Operating Temperature: 0°C - 50°C</li> <li>Operating Humidity: 10% - 95% non-condensing</li> </ul>
Power Draw	12 VDC Input <ul style="list-style-type: none"> <li>Idle: 4.4W</li> <li>Typical: 7.1W</li> <li>Peak: 11.9W</li> </ul> Power over Ethernet Input <ul style="list-style-type: none"> <li>Idle: 4.7W</li> <li>Typical: 7.5W</li> <li>Peak: 12.6W</li> </ul>
USB PORT	<ul style="list-style-type: none"> <li>USB 2.0</li> <li>Type A connector</li> <li>Ideal for BLE dongles and sensors</li> </ul>

PERFORMANCE AND CAPACITY	
Concurrent Stations	<ul style="list-style-type: none"> <li>Up to 512 clients per AP</li> </ul>
Simultaneous Voip Clients	<ul style="list-style-type: none"> <li>Up to 30</li> </ul>

RF	
ANTENNA	<ul style="list-style-type: none"> <li>Adaptive antenna that provides up to 64 unique antenna patterns per radio</li> <li>Full omnidirectional polarization diversity</li> </ul>
PHYSICAL ANTENNA GAIN	<ul style="list-style-type: none"> <li>Up to 3 dBi</li> </ul>
BEAMFLEX* SINR TX GAIN	<ul style="list-style-type: none"> <li>Up to 4 dB</li> </ul>
BEAMFLEX* SINR RX GAIN	<ul style="list-style-type: none"> <li>3-5 dB (PD-MRC)</li> </ul>
INTERFERENCE MITIGATION	<ul style="list-style-type: none"> <li>Up to 10 dB</li> </ul>
MINIMUM RX SENSITIVITY	<ul style="list-style-type: none"> <li>Up to -103 dBm</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

MANAGEMENT	
Deployment Options	<ul style="list-style-type: none"> <li>Standalone (individually managed)</li> <li>Managed by ZoneDirector 9.13**</li> <li>Managed by SmartZone 3.4**</li> <li>Managed by FlexMaster 9.13**</li> <li>Managed by SmartCell Gateway</li> </ul>
Configuration	<ul style="list-style-type: none"> <li>Web User Interface (HTTP/S)</li> <li>CLI (Telnet/SSH), SNMP v1, 2, 3</li> <li>TR-069 vis FlexMaster</li> </ul>
Auto Ap Software Updates	<ul style="list-style-type: none"> <li>FTP or TFTP, remote auto available</li> </ul>

\* some features not supported - e.g., mesh

WI-FI	
Standards	<ul style="list-style-type: none"> <li>IEEE 802.11a/b/g/n/ac</li> <li>2.4GHz and 5GHz</li> </ul>
Supported Data Rates	<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>
Radio Chains	<ul style="list-style-type: none"> <li>2 x 2</li> </ul>
Spatial Streams	<ul style="list-style-type: none"> <li>SU-MIMO : Up to 2 streams</li> <li>MU-MIMO : Up to 2 streams</li> </ul>
Channelization	<ul style="list-style-type: none"> <li>20MHz, 40MHz, 80MHz</li> </ul>
RF POWER OUTPUT (Aggregate)	<ul style="list-style-type: none"> <li>26 dBm for 2.4GHz*</li> <li>25 dBm for 5GHz*</li> </ul>
Operating Channels	<ul style="list-style-type: none"> <li>2.4GHz channels* : 1-13</li> <li>5 GHz channels* : 36-64, 100-140, 149-165</li> </ul>
Frequency Band	<ul style="list-style-type: none"> <li>IEEE 802.11 b/g/n: 2.4 - 2.484 GHz</li> <li>IEEE 802.11a/n/ac: 5.15 - 5.25 GHz; 5.25 - 5.35 GHz; 5.47 - 5.725 GHz; 5.725 - 5.85 GHz</li> </ul>
Power Save	<ul style="list-style-type: none"> <li>Supported</li> </ul>
Wireless Security	<ul style="list-style-type: none"> <li>WPA-PSK, WPA-TKIP, WPA2 AES, 802.11i</li> <li>Authentication via 802.1X with the ZoneDirector, SmartZone, local authentication database, support for RADIUS, LDAP, and ActiveDirectory</li> </ul>
Certifications**	<ul style="list-style-type: none"> <li>U.S., Europe, Australia, Brazil, Canada, Chile, China, Colombia, Costa Rica, Hong Kong, India, Indonesia, Israel, Japan, Korea, Malaysia, Mexico, New Zealand, Peru, Philippines, Saudi Arabia, Singapore, South Africa, Taiwan, Thailand, UAE, Vietnam</li> <li>WEEE/RoHS compliance</li> <li>EN-60601-1-2 (Medical)</li> <li>Wi-Fi Alliance</li> <li>EN50121-1 Railway EMC</li> <li>EN50121-4 Railway Immunity</li> <li>IEC 61373 Railway Shock &amp; Vibration</li> <li>UL 2043 plenum rated</li> <li>5GHz UNII-1 (2014)</li> </ul>

\* Maximum power varies by country  
 \*\* For current certification status please see price list  
 \* Subject to country regulations

### PRODUCT ORDERING INFORMATION

MODEL	DESCRIPTION
Zoneflex R510 Smart Wi-Fi Wave 2 802.11ac Access Point	
901-R510-XX00	Concurrent dual band 802.11ac AP, no power adapter
Optional Accessories	
902-0108-0000	Spare, Accessory Mounting Bracket with padlock support
902-0120-0000	Spare, Accessory Mounting Bracket
902-0173-XXYY	Power Adapter, AC/DC wall plug, 100-240Vac 50/60Hz
902-0162-XXYY	PoE injector (sold in quantities of 10 or 100)

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>