

# ZoneFlex R700

Dual-Band 3x3:3 802.11ac Smart Wi-Fi AP



## DATA SHEET



### BENEFITS

#### INDUSTRY'S HIGHEST PERFORMING THREE-STREAM AP

ZoneFlex R700 delivers better performance over competitive three-stream APs

#### REDUCED WI-FI INTERFERENCE

Up to 15 dB of interference mitigation and a 50 percent reduction in interference to neighboring APs

#### NO NEED TO UPGRADE POE SWITCHES

Works under 802.3af power with no limitations requiring no need to upgrade PoE switches

#### FLEXIBLE DEPLOYMENT OPTIONS

Standalone or controller-based deployment with any of Ruckus ZoneDirectors

#### DUAL CONCURRENT 3X3:3 MIMO AND BEAMFLEX+

Three spatial streams combined with BeamFlex+ adaptive antenna technology ensures the most throughput out of the total 1300 Mbps available without the client capabilities for transmit beamforming

#### ADAPTIVE POLARIZATION DIVERSITY WITH BEAMFLEX+ (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. BeamFlex+ with 802.11ac enables rates at up to 2x the range vs. other vendors

#### IMPROVED PERFORMANCE TO LEGACY CLIENTS

Increases throughput to single and dual-stream clients by combining BeamFlex+, polarization diversity and three radio chains

#### BEST IN CLASS CHANNEL SELECTION WITH CHANNELFLY™

Capacity-driven channel selection predict and automatically selects best performing channel based on statistical, real-time capacity analysis of all RF channels

### THE INDUSTRY'S HIGHEST CAPACITY, HIGHEST PERFORMING THREE-STREAM 802.11AC AP

Ruckus ZoneFlex R700 is the first dual-band, three-stream 802.11ac access point that incorporates Ruckus-patented BeamFlex+™ adaptive antenna arrays.

The ZoneFlex R700 ensures the most reliable connectivity within challenging and ever-changing RF environments. With BeamFlex+, the ZoneFlex R700 offers up to 2x increase in performance and range and is capable of delivering up to 6 dB of signal-to-interference-plus-noise (SINR) improvement and up to 15 dB of interference mitigation over other APs. The ZoneFlex R700 simultaneously supports spatial multiplexing and BeamFlex+ to deliver the best price/performance of any three-stream 802.11ac AP.

With a throughput of 450 Mbps (2.4GHz) and 1300 Mbps (5GHz), the ZoneFlex R700 ensures maximum throughput to three-stream capable clients while also improving single and dual-stream client performance. This is achieved through the unique combination of adaptive antenna technology, predictive channel selection and adaptive polarization diversity. Backward compatible with all existing clients, the ZoneFlex R700 can function either as a standalone AP or as part of centrally-managed Wireless LAN with the Ruckus ZoneDirector Smart WLAN controller.

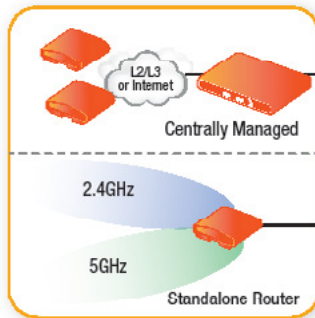
ZoneFlex R700 is purpose-built for high-capacity, high performance and interference-laden environments such as airports, public venues, hotels, universities and conference centers. The perfect choice for data-intensive streaming multimedia applications, the ZoneFlex R700 delivers picture perfect HD-quality IP video while supporting VoIP and data applications that have stringent quality of service requirements.



**Blinding Fast 4-Stream 802.11ac**



**Ultra High User Density**



**Architectural Flexibility**



weight is 1 kg. (2.25 lbs.)

## FEATURES

- Concurrent dual-band (5 GHz/2.4 GHz) support
- Backward compatible with legacy 802.11 clients
- 80 MHz channelization; 256-QAM modulation support; 1300 Mbps PHY rates at 5 GHz
- Automatic interference avoidance, optimized for high-density environments
- Space Time Block Coding for increased handset performance
- Improved Maximum Ratio Combining (MRC) for best-in-class receive sensitivity
- Low Density Parity Check (LDPC) for increased data throughput at all ranges
- BeamFlex+ (PD-MRC) improves signal reception of mobile devices
- Integrated smart antenna with over 3000 unique patterns for ultra reliability
- Unmatched Rx sensitivity down to -99 dBm
- Either standalone or centrally managed
- Integrated NAT and DHCP support
- Compatible with 802.3af Power over Ethernet (PoE)
- Multicast IP video streaming support
- Four software QoS queues per client station
- Future support for advanced spectrum analysis
- Up to 32 (2.4 GHz) and 16 (5 GHz) BSSIDs with unique QoS and security policies
- Wall or ceiling mountable with unobtrusive design
- Built in mounting options for fast and easy deployment

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- WPA-PSK (AES), 802.1X support for RADIUS and AD\*
  - Zero-IT and Dynamic PSK\*
  - Admission control/load balancing\*
  - Band steering and airtime fairness
  - Captive portal and guest accounts \*
  - SmartMesh Networking\*

\* when used with management.

### PATENTED BEAMFLEX+ TECHNOLOGY EXTENDS SIGNAL RANGE, IMPROVES STABILITY OF CLIENT CONNECTIONS

The ZoneFlex R700 integrates a patented software-controlled adaptive antenna array that delivers additional signal gain per radio chain. As BeamFlex+ adapts to client locations and antenna polarity, the smart antenna array optimizes the RF energy toward client on a per packet basis. This allows for up to 2x improvement in signal range and a reduction in packet loss from the ability to automatically mitigate interference and obstacles. By combining BeamFlex+ with the transmit-based beamforming, the ZoneFlex R700 is capable of delivering up to 6 dB of SINR gain while offering concurrent support for spatial multiplexing.

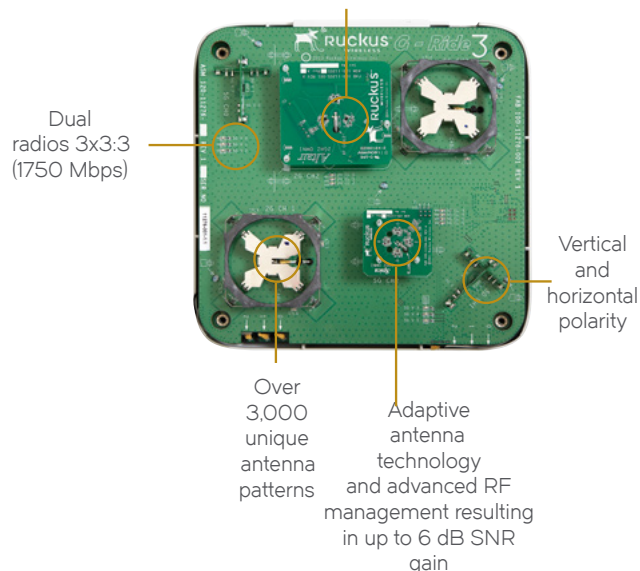
### ADAPTIVE POLARIZATION DIVERSITY FOR UNMATCHED RECEPTION OF MOBILE CLIENT SIGNALS

In dynamic indoor and urban Wi-Fi environments device orientation constantly changes. This affects the polarization of the transmissions. Traditional Wi-Fi antennas are static in nature and only listen using one polarization. This prevents them from capturing the full signal from mobile client devices. The Ruckus R700 listens in all polarizations simultaneously. This results in up to 2x (4 dB) receive signal gain from mobile devices with weak transmitters.

### ADVANCED WLAN APPLICATIONS WITH SMART/OS

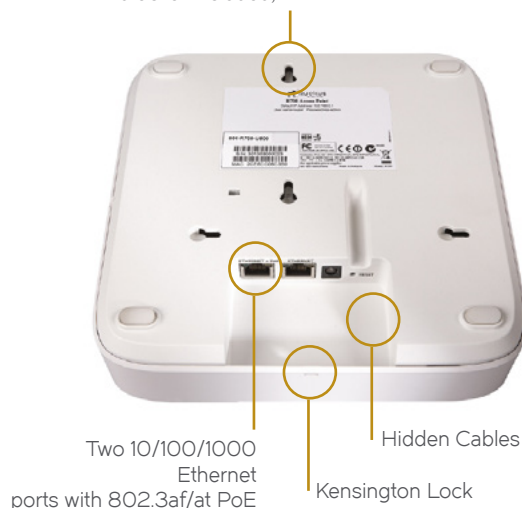
When used with the Ruckus ZoneDirector Smart WLAN controller, the ZoneFlex R700 supports a wide range of value-added applications such as guest networking, Dynamic PSK, hotspot authentication, wireless intrusion prevention and many more. WLANs can also be grouped and shared by specific APs. In a centrally managed configuration, the ZoneFlex R700 works with various authentication servers including AD, LDAP, and RADIUS.

Additive effect of chip-based beamforming of 3 dB signal gain once client compatibility become ubiquitous in the years ahead



Front View

Integrated key holes for wall or ceiling mount (adjustable acoustic drop ceiling bracket included)



PHYSICAL CHARACTERISTICS	
Power	<ul style="list-style-type: none"> <li>DC Input: 12 VDC 1.5A</li> <li>PoE: 802.3af compliant</li> </ul>
Physical Size	<ul style="list-style-type: none"> <li>20.3 cm / 7.99 In. (L), 20.3 cm / 7.99 In. (W), 5 cm / 1.99 In. (H)</li> </ul>
Weight	<ul style="list-style-type: none"> <li>1kg / 2.25 lbs.</li> </ul>
RF	<ul style="list-style-type: none"> <li>Adaptive antenna array that provides 3,000+ unique antenna patterns</li> <li>Maximum Transmit Power(1) 29 dBm on 2.4 GHz; 27 dBm on 5 GHz</li> <li>Physical antenna gain: 3 dBi (2.4 and 5GHz)</li> <li>BeamFlex SINR Tx gain2: up to 6 dB</li> <li>BeamFlex SINR Rx gain: up to 4 dB</li> <li>Interference mitigation: up to 15 dB</li> <li>Minimum Rx sensitivity3: -99 dBm</li> </ul>
Data Ports	<ul style="list-style-type: none"> <li>2 ports, auto MDX, auto-sensing 10/100/1000 Mbps, RJ-45</li> <li>Power over Ethernet (802.3af) with Category 5/5e/6 cable</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: 32°F (0°C) - 122°F (50°C)</li> <li>Operating Humidity: up to 95% non-condensing</li> </ul>
Power Draw	<ul style="list-style-type: none"> <li>5W (minimum)</li> <li>7W (typical)</li> <li>12.95W (peak)</li> </ul>

PERFORMANCE AND CAPACITY	
Phy Data Rates	<ul style="list-style-type: none"> <li>Up to 450 Mbps (2.4GHz)</li> <li>Up to 1300Mbps (5GHz)</li> </ul>
Concurrent Stations	<ul style="list-style-type: none"> <li>Up to 512</li> </ul>
Simultaneous Voip Clients	<ul style="list-style-type: none"> <li>Up to 60 (802.11e/WMM support), 30 per radio</li> </ul>

NETWORK ARCHITECTURE	
IP	<ul style="list-style-type: none"> <li>IPv4, IPv6, dual-stack</li> </ul>
VLANs	<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>
802.1X For Wired Ports	<ul style="list-style-type: none"> <li>Authenticator</li> <li>Supplicant</li> </ul>
Tunneling	<ul style="list-style-type: none"> <li>L2TP, PPPoE</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 SmartZone (2.5.1 &amp; above)</li> <li>Managed by ZoneDirector (9.8 &amp; above)</li> <li>Managed by FlexMaster</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 Software Updates	<ul style="list-style-type: none"> <li>FTP or TFTP, remote auto available</li> </ul>

WI-FI	
Standards	<ul style="list-style-type: none"> <li>IEEE 802.11a/b/g/n/ac</li> <li>2.4GHz and 5GHz concurrent operation</li> </ul>
Supported Data Rates	<ul style="list-style-type: none"> <li>802.11ac: 29.3 Mbps - 1300 Mbps (80MHz)</li> <li>802.11n: 6.5 Mbps - 216.7 Mbps(20MHz) 13.5 Mbps - 450 Mbps (40MHz)</li> <li>802.11a: 54, 48, 36, 24, 18, 12, 9 and 6 Mbps</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/ Streams	<ul style="list-style-type: none"> <li>3 x 3:3</li> </ul>
Channelization	<ul style="list-style-type: none"> <li>20 MHz, 40 MHz, and/or 80 MHz</li> </ul>
Frequency Band	<ul style="list-style-type: none"> <li>IEEE 802.11ac: 5.15 - 5.85 GHz</li> <li>IEEE 802.11a/n: 5.15 - 5.85 GHz</li> <li>IEEE 802.11b: 2.4 - 2.484 GHz</li> </ul>
Operating Channels	<ul style="list-style-type: none"> <li>US/Canada: 1-11, Europe ( ETSI X30): 1-13, Japan X41: 1-13</li> <li>5 GHz channels: Country dependent</li> </ul>
Bssids	<ul style="list-style-type: none"> <li>Up to 32 (2.4 GHz)</li> <li>Up to 16 (5 GHz)</li> </ul>
Power Save	<ul style="list-style-type: none"> <li>Supported</li> </ul>
Certifications <sup>4</sup>	<ul style="list-style-type: none"> <li>WEEE/RoHS compliance</li> <li>EN 60601-1-2 Medical</li> <li>Wi-Fi Alliance certified</li> <li>UL 2043 plenum rated</li> </ul>
Subway And Railroad Certifications	<ul style="list-style-type: none"> <li>EN50121-1 EMC</li> <li>EN50121-4 Immunity</li> <li>IEC 61373 Shock &amp; Vibration</li> </ul>

<sup>1</sup> Max power varies by country setting, band, and MCS rate

<sup>2</sup> BeamFlex+ gains are statistical system-level effects (including TxBF), translated to enhanced SINR here, and based on observations over time in real-world conditions with multiple APs and many clients

<sup>3</sup> Rx sensitivity varies by band, channel width, and MCS rate

<sup>4</sup> Refer to price list for current country certifications

## PRODUCT ORDERING INFORMATION

MODEL	DESCRIPTION
ZoneFlex R700 Dual Band 802.11ac Access Point	
901-R700-XX00	ZoneFlex dual-band (5 GHz and 2.4 GHz concurrent) 802.11ac wireless access point, 3x3:3 streams, adaptive antenna array, dual ports, PoE support. Includes adjustable acoustic drop ceiling bracket. Does not include power adapter.
Optional Accessories	
902-0162-XXYY	<ul style="list-style-type: none"> <li>PoE injector (90 - 264 VAC 47-63 Hz)</li> </ul>
902-0169-XX10, XX11	<ul style="list-style-type: none"> <li>Power supply (90 - 264 VAC 47-63 Hz)</li> </ul>
902-0100-0000	<ul style="list-style-type: none"> <li>Accessory mounting bracket, padlock security option</li> </ul>

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 details see: <http://support.ruckuswireless.com/warranty>