

# Ruckus R720 Access Point

Indoor 802.11ac Wave 2 4x4:4 Wi-Fi Access Point  
with 2.5Gbps backhaul



## DATA SHEET



## BENEFITS

### MULTI-GIGABIT ACCESS SPEEDS

Liberate Wi-Fi Wave 2 performance by connecting to multi-gigabit switches using the onboard 2.5GbE (802.3bz) port

### UNMATCHED PERFORMANCE

Mitigate interference and extend coverage with patented BeamFlex+ utilizing over 4,000 directional antenna patterns.

### SERVICE MORE DEVICES

Support more devices simultaneously with four MU-MIMO spatial streams. Finds more capacity

### OPTIMIZE THROUGHPUT

Improve performance automatically with ChannelFly and machine learning, which finds less congested Wi-Fi channels with dynamic RF channel selection

### MORE DEVICES SUPPORTED

Connects the latest devices with concurrent dual-band radios (2.4/5GHz) and with support of legacy clients

### EXPANDING CAPABILITIES

Augment AP capabilities through the onboard USB 2.0 port to support additional technologies like BLE

### MULTI-FREQUENCY SUPPORT

Concurrent dual-band radios (2.4GHz/5GHz) provide support for even 2.4GHz only devices

### GREAT APPLICATIONS

The R720 is more than just great Wi-Fi with support for onboarding with Cloudpath, locationing with SPoT, analytics with SCI and more

Organizations must support accelerating demands on their WLAN infrastructure with the rise of Internet of Things (IoT), bandwidth hungry applications and Bring Your Own Device (BYOD). The need for employees and customers to have the best user experience is driving organizations in every vertical to adopt the best possible network infrastructure. The Ruckus R720 allows all enterprises to deploy an affordable, high performance and highly resilient Wi-Fi network.

The Ruckus R720 indoor AP is the industry's highest capacity four-stream 802.11ac Wave 2 wireless access point. The R720 delivers reliable connectivity for high-density Wi-Fi environments where noise and interference are a big challenge. With MU-MIMO, the R720 can simultaneously transmit to multiple Wave 2 clients in the widest available channels, drastically improving RF efficiency even for non-Wave 2 clients. In today's networks, it only takes a few 802.11ac clients to impact overall network performance by overdriving a 1Gbps backhaul network connection. This problem is easily solved by the R720's 2.5Gbps backhaul connection, eliminating the need for additional cable runs and switch ports.

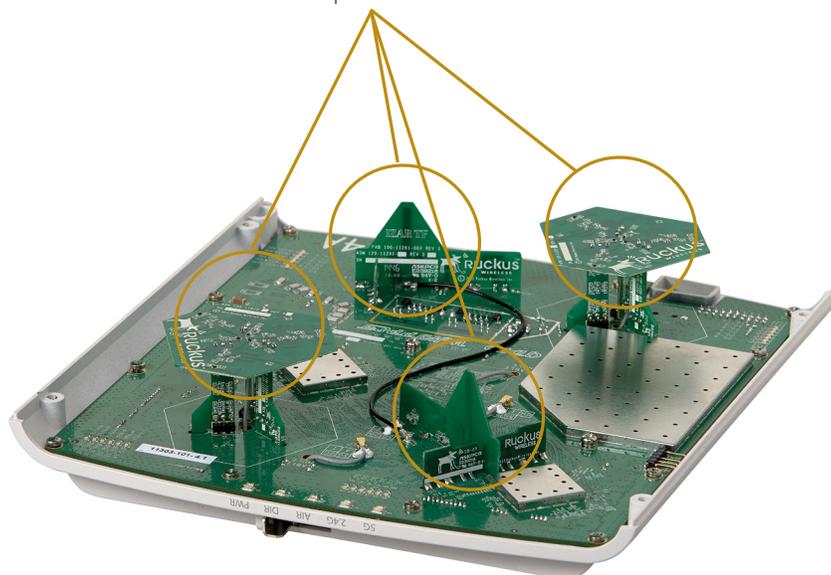
Large enterprises, office buildings, university campuses, convention centers—these are just some of the environments where high-speed, high-capacity Wi-Fi is critical to productivity, revenue generation, and customer satisfaction.

This high-end 802.11ac Wave 2 wireless access point incorporates patented technologies found only in the Ruckus Wi-Fi portfolio.

- BeamFlex+™ adaptive antenna technology directs each packet over the best performing signal path, extending coverage range and mitigating interference automatically.
- ChannelFly technology chooses the best channel to give users the highest throughput—delivering up to 50 percent capacity gain over competitive dynamic channel selection approaches.

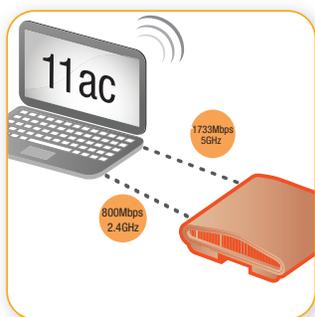
Whether organizations are deploying ten or ten thousand APs, the Ruckus R720 is also easy to manage through Ruckus' appliance, virtual and cloud management options.

### BeamFlex Adaptive Antenna

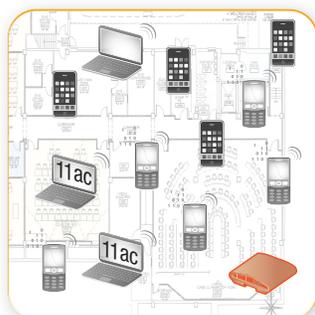


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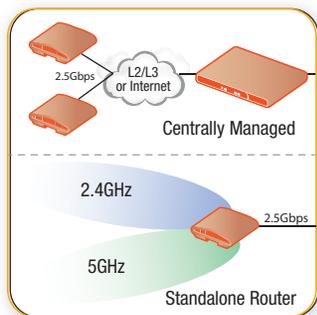
Indoor 802.11ac Wave 2 4x4:4 Wi-Fi Access Point with 2.5Gbps backhaul



Blinding fast Wave 2 4x4:4 802.11ac with MU-MIMO



Deployment Scenarios



Architectural Flexibility



Weight is 1.12 kg. (2.5 lbs.)

## FEATURES

### WIRELESS FEATURES

- 4-stream 802.11ac Multi-User MIMO (MU-MIMO)
- Concurrent dual-band (5GHz/2.4GHz) support
- 80MHz, 80+80MHz and 160MHz channelization; 256-QAM modulation support; 1733 Mbps PHY rates at 5GHz
- 256-QAM support on 2.4GHz
- 802.11ac standard Tx Beamforming
- Backward compatible with legacy 802.11 clients
- 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 many unique patterns for ultra reliability
- Unmatched Rx sensitivity down to -104 dBm

### INTERFACES

- One 2.5Gbps Ethernet port and one 1Gbps Ethernet port
- Ethernet Port Link Aggregation (LACP)
- USB port for hosting Internet-of-Things (IoT) devices such as Bluetooth Low Energy (BLE) smart beacons

### POWER

- 802.3af/at/bt Power over Ethernet (PoE, PoE+, PoH, UPoE) via the 2.5Gbps Ethernet port.
- 12V DC input

Power Source	2.4GHz	5GHz	2nd Eth	USB
802.3af PoE	1x4 18dBm/chain	1x4 20dBm/chain	—	—
802.3at PoE+	4x4 18dBm/chain	4x4 20dBm/chain	—	—
PoH, UPoE, Injector, 12VDC	4x4 23dBm/chain	4x4 22dBm/chain	Yes	Yes

### SOFTWARE

- Four software QoS queues per client station
- Up to 16 BSSIDs per radio with unique QoS and security policies
- Either standalone or centrally managed
- Integrated NAT and DHCP support
- Multicast IP video streaming support
- WPA-PSK (AES), 802.1X support for RADIUS and AD\*
- SmartMesh Networking\*
- Zero-IT (BYOD) and Dynamic PSK\*
- Admission control/load balancing\*
- Band balancing
- Captive portal and guest accounts\*

\* when used with management

### ACCESSORIES

- Wall or ceiling mountable with padlock security
- Built in mounting options for fast and easy deployment

# Ruckus R720 Access Point

Indoor 802.11ac Wave 2 4x4:4 Wi-Fi Access Point with 2.5Gbps backhaul

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

The Ruckus R720 integrates patented software-controlled adaptive antennas that delivers additional signal gain per radio chain. As BeamFlex+ adapts to client locations and antenna polarity, the smart antenna technology optimizes the RF energy toward client on a per packet basis. This allows for substantial performance improvement and a reduction in packet loss from the ability to automatically mitigate interference. BeamFlex+, with PD-MRC or polarization diversity, ensures the R720 listens in all polarizations simultaneously. This results in significant receive signal gain from mobile devices with weak transmitters.

### MULTI-USER MIMO (MU-MIMO)

802.11ac MU-MIMO allows the R720 to transmit multiple spatial streams to multiple client devices simultaneously, increasing the total throughput and capacity of the wireless network. The R720 is able to provide up to four clients each their own dedicated full-bandwidth channel using an MU-MIMO technique known as spatial reuse. This capability enables several benefits:

1. Efficient use of available spectrum effectively multiplies the total capacity of a network, allowing it to meet the increasing data demand driven by the proliferation of mobile Wi-Fi clients and data-hungry applications such as high-definition video streaming.
2. Additionally, MU-MIMO does not require client devices to time-share connections with other clients on the network as in legacy Wi-Fi, which means each device experiences less wait time and makes the network more responsive overall. Even legacy clients benefit from MU-MIMO on the wireless network, because substantially increased efficiency for MU clients leaves the network with more free time and capacity by supporting multiple users.

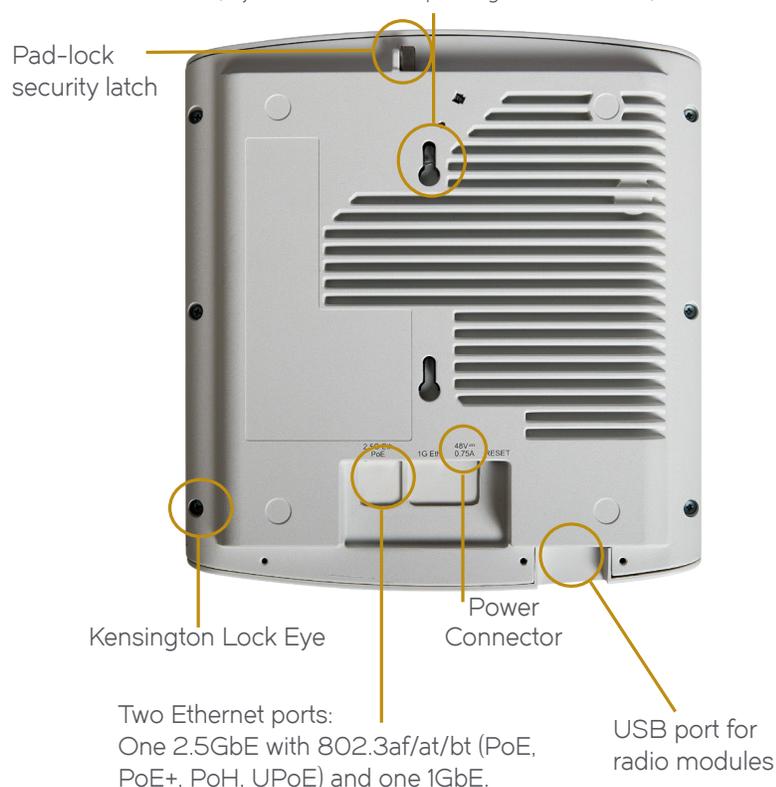
### ADVANCED WLAN APPLICATIONS

When used with the Ruckus WLAN management systems, the Ruckus R720 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 R720 works with various authentication servers including AD, LDAP, and RADIUS.



Front View

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



BeamFlex+ Adaptive Antenna Technology

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PHYSICAL CHARACTERISTICS	
Power <sup>1</sup>	<ul style="list-style-type: none"> <li>DC Input: 12 VDC 2A</li> <li>PoE: 802.3af/at/bt</li> </ul>
Physical Size	<ul style="list-style-type: none"> <li>23 cm (L), 21 cm (W), 6 cm (H)</li> </ul>
Weight	<ul style="list-style-type: none"> <li>112 kg (2.5 lb.)</li> </ul>
Ethernet Ports	<ul style="list-style-type: none"> <li>One 2.5Gbps Ethernet port and one 1Gbps Ethernet port</li> <li>Power over Ethernet (802.3af/at/bt) with Category 5/5e/6 cable</li> <li>Link Aggregation (LACP)</li> </ul>
USB Port	<ul style="list-style-type: none"> <li>USB 2.0</li> <li>Type A connector - ideal for BLE dongles and sensors</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>
Environmental Conditions	<ul style="list-style-type: none"> <li>Operating Temperature: -4°F (-20°C) - 140°F (60°C)</li> <li>Operating Humidity: up to 95% non-condensing</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>
Power Draw	<ul style="list-style-type: none"> <li>5.5W (minimum)</li> <li>11.4W (typical)</li> <li>12.95W peak with 802.3af</li> <li>25W peak with 802.3at</li> <li>35W peak with full power</li> </ul>

RF	
Antenna	<ul style="list-style-type: none"> <li>Adaptive antenna that provides up to 4000+ unique antenna patterns</li> <li>Maximum transmit power (aggregate) is 28dBm for both 2.4 &amp; 5GHz</li> </ul>
Physical Antenna Gain	<ul style="list-style-type: none"> <li>3dB (2.4 and 5GHz)</li> </ul>
Beamflex+ SINR Tx Gain <sup>2</sup>	<ul style="list-style-type: none"> <li>up to 6dB</li> </ul>
Beamflex+ SINR Rx Gain	<ul style="list-style-type: none"> <li>up to 3-5dB</li> </ul>
Interference Mitigation	<ul style="list-style-type: none"> <li>up to 15dB</li> </ul>
Minimum Rx Sensitivity <sup>3</sup>	<ul style="list-style-type: none"> <li>-104dBm</li> </ul>

PERFORMANCE AND CAPACITY	
Phy Data Rates	<ul style="list-style-type: none"> <li>Up to 800Mbps (2.4GHz)</li> <li>Up to 1733Mbps (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), 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</li> </ul>

MULTIMEDIA AND QUALITY OF SERVICE	
802.11e/WMM	<ul style="list-style-type: none"> <li>Supported</li> </ul>
Software Queues	<ul style="list-style-type: none"> <li>Per WLAN priority (2), Per traffic type (4), per client</li> </ul>
Traffic Classification	<ul style="list-style-type: none"> <li>Automatic, heuristics and TOS based or VLAN-defined</li> </ul>
Rate Limiting	<ul style="list-style-type: none"> <li>Dynamic per-user or per-WLAN</li> </ul>

<sup>1</sup>Ruckus wireless proprietary and confidential. Specifications subject to change without notice.

MANAGEMENT	
Deployment Options	<ul style="list-style-type: none"> <li>Standalone (individually managed)</li> <li>Centrally managed</li> </ul>

WI-FI	
Standards	<ul style="list-style-type: none"> <li>IEEE 802.11a/b/g/n/ac</li> </ul>
Supported Data Rates	<ul style="list-style-type: none"> <li>802.11ac: 29.3 Mbps - 1733 Mbps (160MHz<sup>4</sup>)</li> <li>802.11n: 6.5 Mbps - 216.7 Mbps (20MHz) 13.5 Mbps - 800 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>802.11 Gbps: 54, 48, 36, 24, 18, 12, 9 and 6 Mbps</li> </ul>
Radio Chains	<ul style="list-style-type: none"> <li>4x4</li> </ul>
Spatial Streams	<ul style="list-style-type: none"> <li>4</li> </ul>
MIMO	<ul style="list-style-type: none"> <li>SU-MIMO - Up to 4 streams</li> <li>MU-MIMO - Up to 4 streams</li> </ul>
Channelization	<ul style="list-style-type: none"> <li>20MHz, 40MHz, 80MHz, 80+80MHz and/or 160MHz</li> </ul>
Frequency Band	<ul style="list-style-type: none"> <li>IEEE 802.11ac: 5.15 - 5.85GHz</li> <li>IEEE 802.11a/n: 5.15 - 5.85GHz</li> <li>IEEE 802.11b: 2.4 - 2.484GHz</li> </ul>
BSSIDs	<ul style="list-style-type: none"> <li>Up to 16 (2.4GHz)</li> <li>Up to 16 (5GHz)</li> </ul>
Power Save	<ul style="list-style-type: none"> <li>Supported</li> </ul>
Certifications	<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>

## PRODUCT ORDERING INFORMATION

MODEL	DESCRIPTION
Ruckus R720 Smart Wi-Fi 802.11ac Access Point	
901-R720-XX00 <sup>5</sup>	R720 dual-band (5GHz and 2.4GHz concurrent) Wave 2 802.11ac wireless access point, 4x4:4 streams, adaptive antennas, dual ports, PoE support. Includes adjustable acoustic drop ceiling bracket. One Ethernet port is 2.5GbE. Does not include power adaptor.
Optional Accessories	
902-0180-XX00	PoE injector (90 - 264 VAC 47-63 Hz)
902-1170-XX00	AC/DC Power supply - 48V - 36W
902-0120-0000	Secure Mounting Bracket

When ordering Ruckus 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

- 1 Max power varies by country setting, band, and MCS rate
- 2 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
- 3 Rx sensitivity varies by band, channel width, and MCS rate
- 4 With 160MHz channelization enabled, the R720 runs in two spatial stream mode (2x2:2)
- 5 Refer to price list for the complete list of current country certifications

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

