Ruckus R720 Access Point

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

Ruckus™

DATA SHEET

BENEFITS

- Supports 2.5Gbps backhaul for overall increased network performance

- Supports more devices, connecting up to 512 clients per AP

- Supports more services—including streaming HD media, wireless VoIP, bandwidth hungry cloud applications, web browsing, and email—with concurrent dual-band 2.4GHz and 5GHz radios and four queues per client station

- Use fewer APs to cover more area with extended range capabilities provided by BeamFlex+ utilizing more than 4,000 directional antenna patterns

- Improves throughput automatically with ChannelFly technology and dynamic channel selection -delivering up to 50 percent capacity gains

- Provides reduced costs with less cable runs through the use of SmartMesh and PoE

- Fits the aesthetics of virtually any environment with a range of mounting options and sleek, low-profile design

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 the highest performance 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.
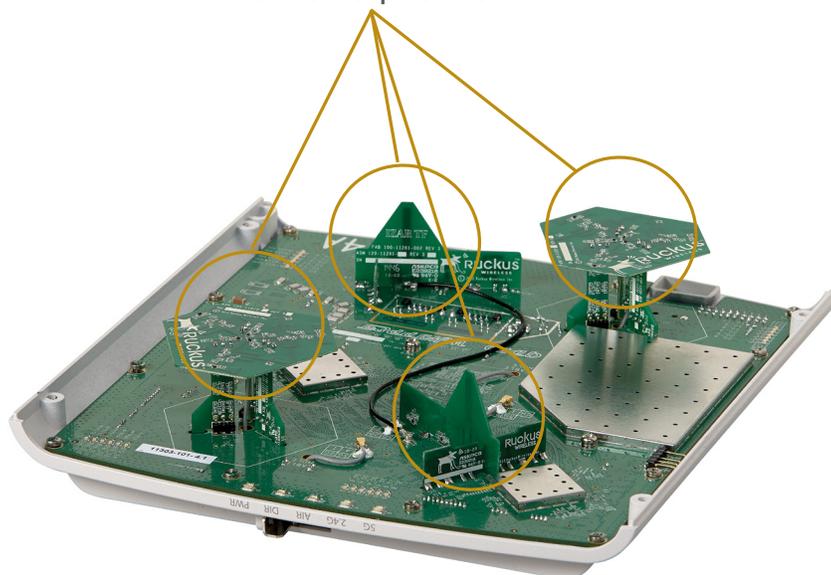
Large enterprises, office buildings, university campuses, convention centers — these are just some of the environments where high-speed, high-capacity Wi-Fi is critical to productivity, revenue generation, and customer satisfaction.
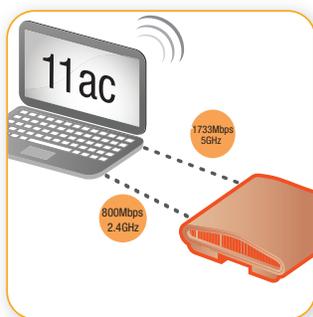
This high-end 802.11ac Wave 2 wireless access point incorporates patented technologies found only in the Ruckus Wi-Fi portfolio.

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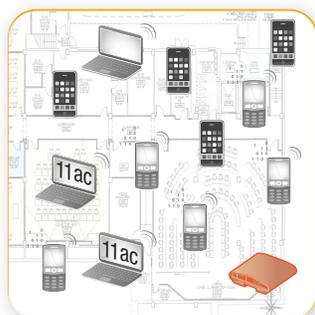
Whether organizations are deploying ten or ten thousand APs, the Ruckus R720 is also easy to manage through Ruckus' appliance, virtual and cloud management options.
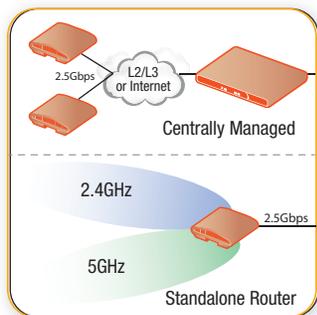
BeamFlex Adaptive Antenna

Ruckus R720 Access Point

802.11ac Wave 2 4x4:4 Indoor Wi-Fi AP 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

- 802.3 at/af Power over Ethernet (PoE) via the 2.5Gbps Ethernet port.

  NOTE: Under 802.3af PoE mode of operation, the USB port and second Ethernet port will be powered off and the access point will function in a 1x4 mode.

- 12V DC input

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

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.
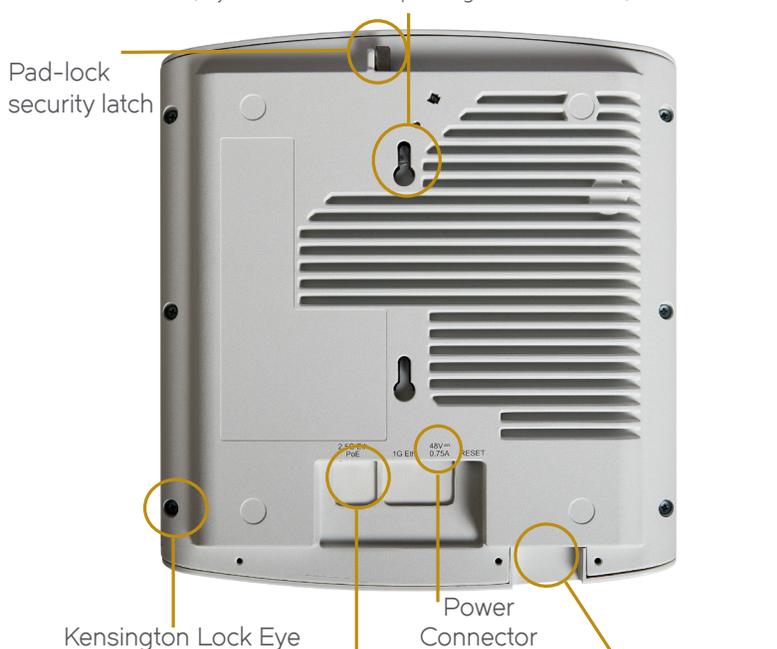
ADVANCED WLAN APPLICATIONS

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)

Pad-lock security latch

Kensington Lock Eye

Power Connector

Two Ethernet ports: One 10/100/1000 with 802.3at PoE+ and one 2.5GbE.

USB Port for BLE

BeamFlex+ Adaptive Antenna Technology

PHYSICAL CHARACTERISTICS

Power[1]	• DC Input: 12 VDC 2A • PoE: 802.3at
Physical Size	• 23 cm (L), 21 cm (W), 6 cm (H)
Weight	• 1.12 kg (2.5 lb.)
Ethernet Ports	• One 2.5Gbps Ethernet port and one 1Gbps Ethernet port • Power over Ethernet (802.3at) with Category 5/5e/6 cable • Link Aggregation (LACP)
USB Port	• USB 2.0 • Type A connector - ideal for BLE dongles and sensors
Mounting Options	• Electrical wallbox; Standard US and EU single gang wall jack • Optional bracket for offset & wall mount
Environmental Conditions	• Operating Temperature: –4°F (-20°C) - 140°F (60°C) • Operating Humidity: up to 95% non-condensing
Lock Options	• Hidden latching mechanism • Kensington Lock Hole • T-bar Torx • Bracket (902-0108-0000) Torx screw & padlock (sold separately)
Power Draw	• 5.5W (minimum) • 11.4W (typical) • 25W peak, no USB, no 1Gbps Ethernet port

RF

Antenna	• Adaptive antenna that provides up to 4000+ unique antenna patterns • Maximum transmit power (aggregate) is 28dBm for both 2.4 & 5GHz
Physical Antenna Gain	• 3dB (2.4 and 5GHz)
Beamflex+ SINR Tx Gain[2]	• up to 6dB
Beamflex+ SINR Rx Gain	• up to 3-5dB
Interference Mitigation	• up to 15dB
Minimum Rx Sensitivity[3]	• -104dBm

PERFORMANCE AND CAPACITY

Phy Data Rates	• Up to 800Mbps (2.4GHz) • Up to 1733Mbps (5GHz)
Concurrent Stations	• Up to 512
Simultaneous VoIP Clients	• Up to 60 (802.11e/WMM), 30 per radio

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 Wired Ports	• Authenticator • Supplicant
Tunneling	• L2TP

MULTIMEDIA AND QUALITY OF SERVICE

802.11e/WMM	• Supported
Software Queues	• Per WLAN priority (2), Per traffic type (4), per client
Traffic Classification	• Automatic, heuristics and TOS based or VLAN-defined
Rate Limiting	• Dynamic per-user or per-WLAN

*Ruckus wireless proprietary and confidential. Specifications subject to change without notice

MANAGEMENT

Deployment Options	• Standalone (individually managed) • Centrally managed

WI-FI

Standards	• IEEE 802.11a/b/g/n/ac
Supported Data Rates	• 802.11ac: 29.3 Mbps – 1733 Mbps (160MHz[4]) • 802.11n: 6.5 Mbps – 216.7 Mbps(20MHz) 13.5 Mbps – 800 Mbps (40MHz) • 802.11a: 54, 48, 36, 24, 18, 12, 9 and 6 Mbps • 802.11b: 11, 5.5, 2 and 1 Mbps • 802.11 Gbps: 54, 48, 36, 24, 18, 12, 9 and 6 Mbps
Radio Chains	• 4x4
Spatial Streams	• 4
MIMO	• SU-MIMO — Up to 4 streams • MU-MIMO — Up to 4 streams
Channelization	• 20MHz, 40MHz, 80MHz, 80+80MHz and/or 160MHz
Frequency Band	• IEEE 802.11ac: 5.15 – 5.85GHz • IEEE 802.11a/n: 5.15 – 5.85GHz • IEEE 802.11b: 2.4 – 2.484GHz
BSSIDs	• Up to 16 (2.4GHz) • Up to 16 (5GHz)
Power Save	• Supported
Certifications	• WEEE/RoHS compliance • EN 60601-1-2 Medical • Wi-Fi Alliance certified • UL 2043 plenum rated
Subway And Railroad Certifications	• EN50121-1 EMC • EN50121-4 Immunity • IEC 61373 Shock & Vibration

PRODUCT ORDERING INFORMATION

MODEL	DESCRIPTION
Ruckus R720 Smart Wi-Fi 802.11ac Access Point	
901-R720-XX00[5]	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	
902-0162-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

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Simply Better Wireless.