

RUCKUS® R750

Indoor Wi-Fi 6 (802.11ax) Access Point for Ultra-Dense Environments



Benefits

Connect more devices simultaneously

Improve device performance, by enabling more simultaneous device connections with built-in 8 spatial streams (4x4:4 in 5GHz, 4x4:4 in 2.4GHz), MU-MIMO and OFDMA technology.

High density performance

Provides exceptional end-user experience within large meeting halls, general enterprise spaces, and large classrooms with the RUCKUS Ultra-High-Density Technology Suite.

Converged Access Point

Allows customers to eliminate siloed networks and unify WiFi and non-WiFi wireless technologies into one single network by using built-in BLE and Zigbee, and also expanding to any future wireless technologies through the USB port.

Multigigabit access speeds

Optimized multi-gigabit Wi-Fi performance delivered using the built-in 2.5GbE port to connect to multigigabit switches.

Multiple management options

Manage the R750 with on premise physical/ virtual appliances and control auto-provisioning for faster deployment and seamless firmware upgrades.

Enhanced Security

Enhanced securityThe latest Wi-Fi security standard with WPA3 and receive enhanced protection from man-in-the-middle attacks in the most secure way.

More Than Wi-Fi

Support services beyond Wi-Fi with [RUCKUS IoT Suite](#), [Cloudpath](#)® security and onboarding software, [SPoT](#) Wi-Fi locationing engine, and [SCI](#) network analytics.

The RUCKUS® R750 is based on the latest Wi-Fi 6 standard and bridges the performance gap from 'gigabit' Wi-Fi to 'multi-gigabit' Wi-Fi in support of the insatiable demand for better and faster Wi-Fi. The R750 is the first Wi-Fi 6 AP to be certified by Wi-Fi Alliance as Wi-Fi CERTIFIED 6. As part of the Wi-Fi Alliance testbed, the R750 validates other devices for Wi-Fi CERTIFIED 6 interoperability.

The RUCKUS R750 is our high-end dual-band, dual-concurrent Wi-Fi 6 AP that supports 8 spatial streams (4x4:4 in 5GHz, 4x4:4 in 2.4GHz). The R750, with OFDMA and MU-MIMO capabilities, efficiently manages up to 1024 client connections with increased capacity, improved coverage and performance in ultra-high dense environments.

The R750, with OFDMA, TWT and MU-MIMO capabilities, efficiently manages up to 1024 client connections with increased capacity, improved coverage and performance in ultra-dense environments. Furthermore, multi-gigabit Ethernet ensures the backhaul is not a bottleneck for full use of available Wi-Fi capacity.

Also, wireless requirements within enterprises are expanding beyond Wi-Fi with BLE, Zigbee and many other non-Wi-Fi wireless technologies. Enterprises need a unified platform to eliminate network silos. The RUCKUS AP portfolio is equipped to solve these challenges through wireless convergence.

The R750 has built-in IoT radios with onboard BLE and Zigbee capabilities. In addition, the R750 is a converged access point that allows customers to seamlessly integrate any new wireless technologies with our USB port.

The R750 addresses the increasing client demands in transit hubs, auditoriums, conference centers, and other high traffic indoor spaces. It is the perfect choice for data-intensive streaming multimedia applications like 4K video transmissions, while supporting latency sensitive voice and data applications with stringent quality-of-service requirements. The R750 is also easy to manage through RUCKUS physical and virtual cloud management options.

The R750 when paired with the RUCKUS Ultra-High-Density Technology Suite found only in the RUCKUS Wi-Fi portfolio, dramatically improves network performance through a combination of patented wireless innovations and learning algorithms that includes:

- **Airtime Decongestion:** Increases average network throughput in heavily congested environments
- **Transient Client management:** Reduces interference traffic from unconnected Wi-Fi devices
- **BeamFlex® + Antennas:** Extended coverage and optimized throughput with patented multi-directional antennas and radio patterns

Whether you are deploying ten or ten thousand APs, the R750 is also easy to manage through RUCKUS' physical and virtual management options.

RUCKUS[®] R750

Indoor Wi-Fi 6 (802.11ax) Access Point for Ultra-Dense Environments



Front View



RUCKUS[®] R750

Indoor Wi-Fi 6 (802.11ax) Access Point for Ultra-Dense Environments

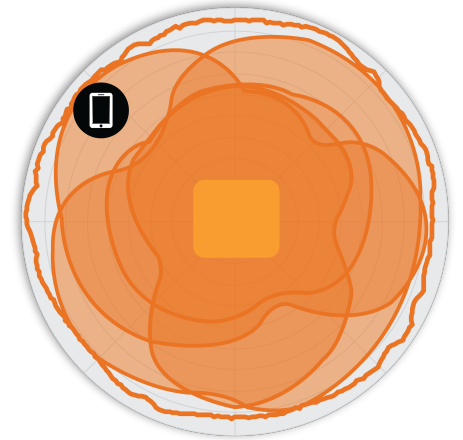
Access Point Antenna Pattern

RUCKUS' BeamFlex+ adaptive antennas allow the R750 AP to dynamically choose among a host of antenna patterns (over 4,000 possible combinations) in real-time to establish the best possible connection with every device. This leads to:

- Better Wi-Fi coverage
- Reduced RF interference

Traditional omni-directional antennas, found in generic access points, oversaturate the environment by needlessly radiating RF signals in all directions. In contrast, the RUCKUS BeamFlex+ adaptive antenna directs the radio signals per-device on a packet by-packet basis to optimize Wi-Fi coverage and capacity in real-time to support high device density environments. BeamFlex+ operates without the need for device feedback and hence can benefit even devices using legacy standards.

Figure 1. Example of BeamFlex+ pattern



Client Composite Pattern BeamFlex+ Pattern

Figure 2. R750 2.4GHz AzimuthAntenna Patterns



Figure 3. R750 5GHz AzimuthAntenna Patterns



Figure 4. R750 2.4GHz Elevation Antenna Patterns



Figure 5. R750 5GHz Elevation Antenna Patterns



Note: The outer trace represents the composite RF footprint of all possible BeamFlex+ antenna patterns, while the inner trace represents one BeamFlex+ antenna pattern within the composite outer trace.

RUCKUS® R750

Indoor Wi-Fi 6 (802.11ax) Access Point for Ultra-Dense Environments

| Wi-Fi | |
|--------------------------|--|
| Wi-Fi Standards | <ul style="list-style-type: none"> IEEE 802/11a/b/g/n/ac/ax |
| Supported Rates | <ul style="list-style-type: none"> 802.11ax: 4 to 2400 Mbps 802.11ac: 6.5 to 1732 Mbps 802.11n: 6.5 to 600 Mbps 802.11a/g: 6 to 54 Mbps 802.11b: 1 to 11 Mbps |
| Supported Channels | <ul style="list-style-type: none"> 2.4GHz: 1-13 5GHz: 36-64, 100-144, 149-165 |
| MIMO | <ul style="list-style-type: none"> 4x4 SU-MIMO 4x4 MU-MIMO |
| Spatial Streams | <ul style="list-style-type: none"> 4 for both SU-MIMO & MU-MIMO |
| Radio Chains and Streams | <ul style="list-style-type: none"> 4x4:4 |
| Channelization | <ul style="list-style-type: none"> 20, 40, 80, 160/80+80MHz |
| Security | <ul style="list-style-type: none"> WPA-PSK, WPA-TKIP, WPA2 AES, WPA3, 802.11i, Dynamic PSK, OWE WIPS/WIDS |
| Other Wi-Fi Features | <ul style="list-style-type: none"> WMM, Power Save, Tx Beamforming, LDPC, STBC, 802.11r/k/v Hotspot Hotspot 2.0 Captive Portal WISPr |

| RF | |
|--|--|
| Antenna Type | <ul style="list-style-type: none"> BeamFlex+ adaptive antennas with polarization diversity Adaptive antenna that provides 4,000+ unique antenna patterns per band |
| Antenna Gain (max) | <ul style="list-style-type: none"> Up to 3dBi |
| Peak Transmit Power (Tx port/chain + Combining gain) | <ul style="list-style-type: none"> 2.4GHz: 26dBm 5GHz: 28 dBm |
| Frequency Bands | <ul style="list-style-type: none"> ISM (2.4-2.484GHz) U-NII-1 (5.15-5.25GHz) U-NII-2A (5.25-5.35GHz) U-NII-2C (5.47-5.725GHz) U-NII-3 (5.725-5.85GHz) |

| 2.4GHZ RECEIVE SENSITIVITY (dBm) | | | | | | | |
|----------------------------------|------|------|-------|-------|------|-------|-------|
| HT20 | | HT40 | | VHT20 | | VHT40 | |
| MCS0 | MCS7 | MCS0 | MCS7 | MCS0 | MCS7 | MCS0 | MCS7 |
| -96 | -78 | -93 | -75 | -96 | -78 | -93 | -75 |
| HE 20 | | | | HE40 | | | |
| MCS0 | MCS7 | MCS9 | MCS11 | MCS0 | MCS7 | MCS9 | MCS11 |
| -96 | -78 | -73 | -67 | -93 | -75 | -70 | -64 |

| 5GHZ RECEIVE SENSITIVITY (dBm) | | | | | | | | | | | |
|--------------------------------|------|------|-------|-------|------|------|-------|-------|------|------|-------|
| VHT20 | | | | VHT40 | | | | VHT80 | | | |
| MCS0 | MCS7 | MCS8 | MCS9 | MCS0 | MCS7 | MCS8 | MCS9 | MCS0 | MCS7 | MCS8 | MCS9 |
| -98 | -80 | -77 | - | -95 | -77 | - | -72 | -92 | -74 | - | -69 |
| HE20 | | | | HE40 | | | | HE80 | | | |
| MCS0 | MCS7 | MCS9 | MCS11 | MCS0 | MCS7 | MCS9 | MCS11 | MCS0 | MCS7 | MCS9 | MCS11 |
| -98 | -80 | -75 | -70 | -95 | -77 | -72 | -67 | -92 | -74 | -69 | -64 |

| 2.4GHZ TX POWER TARGET (PER CHAIN) | |
|------------------------------------|------------|
| Rate | Pout (dBm) |
| MCS0 HT20 | 20 |
| MCS7 HT20 | 16 |
| MCS8 VHT20 | 15 |
| MCS9 VHT40 | 14 |
| MCS11 HE40 | 12 |

| 5GHZ TX POWER TARGET (PER CHAIN) | |
|----------------------------------|------------|
| Rate | Pout (dBm) |
| MCS0, VHT20 | 22 |
| MCS7, VHT40, VHT80 | 19 |
| MCS9, VHT40, VHT80 | 17 |
| MCS11, HE20, HE40, HE80 | 15 |

| PERFORMANCE AND CAPACITY | |
|--------------------------|--|
| Peak PHY Rates | <ul style="list-style-type: none"> 2.4GHz: 1148 Mbps 5GHz: 2400 Mbps |
| Client Capacity | <ul style="list-style-type: none"> Up to 1024 clients per AP |
| SSID | <ul style="list-style-type: none"> Up to 31 per AP |

| RUCKUS RADIO MANAGEMENT | |
|------------------------------|---|
| Antenna Optimization | <ul style="list-style-type: none"> BeamFlex+ Polarization Diversity with Maximal Ratio Combining (PD-MRC) |
| Wi-Fi Channel Management | <ul style="list-style-type: none"> ChannelFly Background Scan Based |
| Client Density Management | <ul style="list-style-type: none"> Adaptive Band Balancing Client Load Balancing Airtime Fairness Airtime-based WLAN Prioritization |
| SmartCast Quality of Service | <ul style="list-style-type: none"> QoS-based scheduling Directed Multicast L2/L3/L4 ACLs |
| Mobility | <ul style="list-style-type: none"> SmartRoam |
| Diagnostic Tools | <ul style="list-style-type: none"> Spectrum Analysis SpeedFlex |

RUCKUS[®] R750

Indoor Wi-Fi 6 (802.11ax) Access Point for Ultra-Dense Environments

| NETWORKING | |
|-----------------------------|---|
| Controller Platform Support | <ul style="list-style-type: none"> SmartZone ZoneDirector Unleashed¹ Standalone Cloud |
| Mesh | <ul style="list-style-type: none"> SmartMesh™ wireless meshing technology. Self-healing Mesh |
| IP | <ul style="list-style-type: none"> IPv4, IPv6, dual-stack |
| VLAN | <ul style="list-style-type: none"> 802.1Q (1 per BSSID or dynamic per user based on RADIUS) VLAN Pooling Port-based |
| 802.1x | <ul style="list-style-type: none"> Authenticator & Supplicant |
| Tunnel | <ul style="list-style-type: none"> L2TP, GRE, Soft-GRE |
| Policy Management Tools | <ul style="list-style-type: none"> Application Recognition and Control Access Control Lists Device Fingerprinting Rate Limiting |
| IoT Capable | <ul style="list-style-type: none"> Yes |

| PHYSICAL INTERFACES | |
|---------------------|---|
| Ethernet | <ul style="list-style-type: none"> One 2.5Gbps Ethernet port and one 1Gbps Ethernet port Power over Ethernet (802.3af/at/bt) with Category 5/5e/6 cable LLDP |
| USB | <ul style="list-style-type: none"> 1 USB 2.0 port, Type A |

| PHYSICAL CHARACTERISTICS | |
|--------------------------|---|
| Physical Size | <ul style="list-style-type: none"> 23.5cm (L), 20.6cm (W), 6.2cm (H) 9.3in (L) x 8.1in (W) x 2.4in (H) |
| Weight | <ul style="list-style-type: none"> 1.01 kg 2.23 lbs |
| Mounting | <ul style="list-style-type: none"> Wall, acoustic ceiling, desk Secure bracket (sold separately) |
| Physical Security | <ul style="list-style-type: none"> Hidden latching mechanism T-bar Torx Bracket (902-0120-0000) Torx screw & padlock (sold separately) |
| Operating Temperature | <ul style="list-style-type: none"> 0°C (32°F) - 50°C (122°F) |
| Operating Humidity | <ul style="list-style-type: none"> Up to 95%, non-condensing |

| POWER ² | | |
|--------------------|---|-----------------------------------|
| Power Supply | Operating Characteristics | Max Power Consumption |
| 802.3af PoE | <ul style="list-style-type: none"> 2.4GHz radio: 2x4, 19dBm per chain 5GHz radio: 2x4, 20dBm per chain 2nd Ethernet port, onboard IoT & USB disabled | PoE: 12.54W |
| 802.3at PoE+ | <ul style="list-style-type: none"> Full Functionality 2.4GHz radio: 4x4, 20 dBm per chain 5GHz radio: 4x4, 22 dBm per chain 2nd Ethernet Port, onboard IoT & USB Enabled (3W) | PoE+ : 22.34W DC Power: 22.69W |

| CERTIFICATIONS AND COMPLIANCE | |
|-----------------------------------|--|
| Wi-Fi Alliance ³ | <ul style="list-style-type: none"> Wi-Fi CERTIFIED™ a, b, g, n, ac, ax Passpoint[®], Vantage |
| Standards Compliance ⁴ | <ul style="list-style-type: none"> EN 60950-1 Safety EN 60601-1-2 Medical EN 61000-4-2/3/5 Immunity EN 50121-1 Railway EMC EN 50121-4 Railway Immunity IEC 61373 Railway Shock & Vibration UL 2043 Plenum EN 62311 Human Safety/RF Exposure WEEE & RoHS ISTA 2A Transportation |

| SOFTWARE AND SERVICES | |
|-------------------------|---|
| Location Based Services | <ul style="list-style-type: none"> SPoT |
| Network Analytics | <ul style="list-style-type: none"> SmartCell Insight (SCI) |
| Security and Policy | <ul style="list-style-type: none"> Cloudpath |

| ORDERING INFORMATION | |
|----------------------|--|
| 901-R750-XX00 | <ul style="list-style-type: none"> R750 dual-band (5GHz and 2.4GHz concurrent) 802.11ax wireless access point, 4x4:4 streams, adaptive antennas, dual ports, onboard BLE and Zigbee, PoE support. Includes adjustable acoustic drop ceiling bracket. One Ethernet port is 2.5GbE. Does not include power adaptor. |

See RUCKUS price list for country-specific ordering information.
 Warranty: Sold with a limited lifetime warranty.
 For details see: <http://support.ruckuswireless.com/warranty>.

¹ Refer to Unleashed datasheets for SKU ordering information.

² Max power varies by country setting, band, and MCS rate.

³ For complete list of WFA certifications, please see Wi-Fi Alliance website.

⁴ For current certification status, please see price list.

RUCKUS[®] R750

Indoor Wi-Fi 6 (802.11ax) Access Point for Ultra-Dense Environments

| OPTIONAL ACCESSORIES | |
|----------------------|--|
| 902-0180-XX00 | • PoE Injector (60W) |
| 902-1170-XX00 | • Power Supply (48V, 0.75A, 36W) |
| 902-1180-XX00 | • Multigigabit PoE injector (2.5/5/10)-BaseT PoE port, 60W |
| 902-0120-0000 | • Spare, Accessory Mounting Bracket |
| 902-0195-0000 | • Spare, T-bar ceiling mount kit for mounting to flush frame ceiling |

PLEASE NOTE: When ordering 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.

CommScope pushes the boundaries of communications technology with game-changing ideas and ground-breaking discoveries that spark profound human achievement. We collaborate with our customers and partners to design, create and build the world's most advanced networks. It is our passion and commitment to identify the next opportunity and realize a better tomorrow. Discover more at commscope.com

COMMSCOPE[®]



commscope.com

Visit our website or contact your local CommScope representative for more information.

© 2021 CommScope, Inc. All rights reserved.

Unless otherwise noted, all trademarks identified by ® or ™ are registered trademarks, respectively, of CommScope, Inc. This document is for planning purposes only and is not intended to modify or supplement any specifications or warranties relating to CommScope products or services. CommScope is committed to the highest standards of business integrity and environmental sustainability with a number of CommScope's facilities across the globe certified in accordance with international standards, including ISO 9001, TL 9000, and ISO 14001.

Further information regarding CommScope's commitment can be found at www.commscope.com/About-Us/Corporate-Responsibility-and-Sustainability.