The 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 performancethrough a combination of patented wireless innovations and learning algorithmsthat 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.
R750
Indoor Wi-Fi 6 (802.11ax) Access Point for Ultra-Dense Environments

Front View

8.1 in (20.6 cm)
2.4 in (6.2 cm)
9.3 in (23.5 cm)

Weight: 2.23 lbs (1.01 kg)
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.

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.
**Wi-Fi**

**Wi-Fi Standards**
- IEEE 802/11a/b/g/n/ac/ax

**Supported Rates**
- 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**
- 2.4GHz: 1-13
- 5GHz: 36-64, 100-144, 149-165

**MIMO**
- 4x4 SU-MIMO
- 4x4 MU-MIMO

**Spatial Streams**
- 4 for both SU-MIMO & MU-MIMO

**Radio Chains and Streams**
- 4x4:4

**Channelization**
- 20, 40, 80, 160/80+80MHz

**Security**
- WMM, Power Save, Tx Beamforming, LDPC, STBC, 802.11i, WIPS/WIDS
- WPA-PSK, WPA-TKIP, WPA2 AES, WPA3, 802.11i, Dynamic PSK, OWE
- WIPS/WIDS

**Other Wi-Fi Features**
- WMM, Power Save, Tx Beamforming, LDPC, STBC, 802.11i, Dynamic PSK, OWE
- WIPS/WIDS
- WMM, Power Save, Tx Beamforming, LDPC, STBC, 802.11i, Dynamic PSK, OWE
- WIPS/WIDS

**RF**

**Antenna Type**
- BeamFlex+ adaptive antennas with polarization diversity
- Adaptive antenna that provides 4,000+ unique antenna patterns per band

**Antenna Gain (max)**
- Up to 3dBi

**Peak Transmit Power (Tx port/chain + Combining gain)**
- 2.4GHz: 26dBm
- 5GHz: 28 dBm

**Frequency Bands**
- 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)**

<table>
<thead>
<tr>
<th>Rate</th>
<th>HT20</th>
<th>HT40</th>
<th>VHT20</th>
<th>VHT40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pout (dBm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCS0</td>
<td>-96</td>
<td>-78</td>
<td>-93</td>
<td>-75</td>
</tr>
<tr>
<td>MCS7</td>
<td>-96</td>
<td>-78</td>
<td>-93</td>
<td>-75</td>
</tr>
<tr>
<td>HE 20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCS0</td>
<td>-78</td>
<td>-73</td>
<td>-67</td>
<td>-70</td>
</tr>
<tr>
<td>MCS7</td>
<td>-78</td>
<td>-73</td>
<td>-67</td>
<td>-70</td>
</tr>
<tr>
<td>HE40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCS0</td>
<td>-96</td>
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<td>-70</td>
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<tr>
<td>MCS7</td>
<td>-95</td>
<td>-80</td>
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<td>-70</td>
</tr>
<tr>
<td>MCS9</td>
<td>-92</td>
<td>-80</td>
<td>-77</td>
<td>-70</td>
</tr>
<tr>
<td>HE 20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCS0</td>
<td>-92</td>
<td>-80</td>
<td>-77</td>
<td>-70</td>
</tr>
<tr>
<td>MCS7</td>
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<td>-70</td>
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<td>MCS9</td>
<td>-92</td>
<td>-80</td>
<td>-77</td>
<td>-70</td>
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<tr>
<td>MCS11</td>
<td>-92</td>
<td>-80</td>
<td>-77</td>
<td>-70</td>
</tr>
</tbody>
</table>

**5GHz RECEIVE SENSITIVITY (dBm)**

<table>
<thead>
<tr>
<th>Rate</th>
<th>VHT20</th>
<th>VHT40</th>
<th>VHT80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pout (dBm)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCS0</td>
<td>-98</td>
<td>-80</td>
<td>-77</td>
</tr>
<tr>
<td>MCS7</td>
<td>-95</td>
<td>-80</td>
<td>-77</td>
</tr>
<tr>
<td>MCS8</td>
<td>-92</td>
<td>-80</td>
<td>-77</td>
</tr>
<tr>
<td>MCS9</td>
<td>-92</td>
<td>-80</td>
<td>-77</td>
</tr>
<tr>
<td>HE 20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCS0</td>
<td>-95</td>
<td>-80</td>
<td>-77</td>
</tr>
<tr>
<td>MCS7</td>
<td>-95</td>
<td>-80</td>
<td>-77</td>
</tr>
<tr>
<td>MCS8</td>
<td>-92</td>
<td>-80</td>
<td>-77</td>
</tr>
<tr>
<td>MCS9</td>
<td>-92</td>
<td>-80</td>
<td>-77</td>
</tr>
<tr>
<td>MCS11</td>
<td>-92</td>
<td>-80</td>
<td>-77</td>
</tr>
</tbody>
</table>

**2.4GHZ TX POWER TARGET (PER CHAIN)**

<table>
<thead>
<tr>
<th>Rate</th>
<th>Pout (dBm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCS0 HT20</td>
<td>20</td>
</tr>
<tr>
<td>MCS7 HT20</td>
<td>16</td>
</tr>
<tr>
<td>MCS8 VHT20</td>
<td>15</td>
</tr>
<tr>
<td>MCS9 VHT40</td>
<td>14</td>
</tr>
<tr>
<td>MCS11 HE40</td>
<td>12</td>
</tr>
</tbody>
</table>

**5GHZ TX POWER TARGET (PER CHAIN)**

<table>
<thead>
<tr>
<th>Rate</th>
<th>Pout (dBm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCS5, VHT20</td>
<td>22</td>
</tr>
<tr>
<td>MCS7, VHT40, VHT80</td>
<td>19</td>
</tr>
<tr>
<td>MCS9, VHT40, VHT80</td>
<td>17</td>
</tr>
<tr>
<td>MCS11, HE20, HE40, HE80</td>
<td>15</td>
</tr>
</tbody>
</table>

**PERFORMANCE AND CAPACITY**

**Peak PHY Rates**
- 2.4GHz: 1148 Mbps
- 5GHz: 2400 Mbps

**Client Capacity**
- Up to 1024 clients per AP

**SSID**
- Up to 31 per AP

**RUCKUS RADIO MANAGEMENT**

**Antenna Optimization**
- BeamFlex+
- Polarization Diversity with Maximal Ratio Combining (PD-MRC)

**Wi-Fi Channel Management**
- ChannelFly
- Background Scan Based

**Client Density Management**
- Adaptive Band Balancing
- Client Load Balancing
- Airtime Fairness
- Airtime-based WLAN Prioritization

**SmartCast Quality of Service**
- QoS-based scheduling
- Directed Multicast
- L2/L3/L4 ACLs

**Mobility**
- SmartRoam

**Diagnostic Tools**
- Spectrum Analysis
- SpeedFlex
R750
Indoor Wi-Fi 6 (802.11ax) Access Point for Ultra-Dense Environments

DATA SHEET

NETWORKING

Controller Platform Support
- SmartZone
- ZoneDirector
- Unleashed
- Standalone

Mesh
- SmartMesh™ wireless meshing technology. Self-healing Mesh

IP
- IPv4, IPv6, dual-stack

VLAN
- 802.1Q (1 per BSSID or dynamic per user based on RADIUS)
- VLAN Pooling
- Port-based

802.1x
- Authenticator & Supplicant

Tunnel
- L2TP, GRE, Soft-GRE

Policy Management Tools
- Application Recognition and Control
- Access Control Lists
- Device Fingerprinting
- Rate Limiting

IoT Capable
- Yes

PHYSICAL INTERFACES

Ethernet
- 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
- 1 USB 2.0 port, Type A

PHYSICAL CHARACTERISTICS

Physical Size
- 23.5cm (L), 20.6cm (W), 6.2cm (H)
- 9.3in (L) x 8.1in (W) x 2.4in (H)

Weight
- 1.01 kg
- 2.23 lbs

Mounting
- Wall, acoustic ceiling, desk
- Secure bracket (sold separately)

Physical Security
- Hidden latching mechanism
- Kensington Lock Hole
- T-bar Torx
- Bracket (902-0120-0000) Torx screw & padlock (sold separately)

Operating Temperature
- 0°C (32°F) - 50°C (122°F)

Operating Humidity
- Up to 95%, non-condensing

POWER

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>Operating Characteristics</th>
<th>Max Power Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>802.3af PoE</td>
<td>2.4GHz radio: 2x4, 19dBm per chain</td>
<td>PoE: 12.54W</td>
</tr>
<tr>
<td></td>
<td>5GHz radio: 2x4, 20dBm per chain</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2nd Ethernet port, onboard IoT &amp; USB disabled</td>
<td></td>
</tr>
<tr>
<td>802.3at PoE+</td>
<td>Full Functionality</td>
<td>PoE+: 22.34W</td>
</tr>
<tr>
<td></td>
<td>2.4GHz radio: 4x4, 20 dBm per chain</td>
<td>DC Power: 22.69W</td>
</tr>
<tr>
<td></td>
<td>5GHz radio: 4x4, 22 dBm per chain</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2nd Ethernet Port, onboard IoT &amp; USB Enabled (3W)</td>
<td></td>
</tr>
</tbody>
</table>

CERTIFICATIONS AND COMPLIANCE

Wi-Fi Alliance
- Wi-Fi CERTIFIED™ a, b, g, n, ac, ax
- Passpoint®, Vantage

Standards Compliance
- 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
- SPoT

Network Analytics
- SmartCell Insight (SCI)

Security and Policy
- Cloudpath

ORDERING INFORMATION

901-R750-XX00
- 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](http://support.ruckuswireless.com/warranty)

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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.
### R750
Indoor Wi-Fi 6 (802.11ax) Access Point for Ultra-Dense Environments

**OPTIONAL ACCESSORIES**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>902-0180-XX00</td>
<td>PoE Injector (60W)</td>
</tr>
<tr>
<td>902-1170-XX00</td>
<td>Power Supply (48V, 0.75A, 36W)</td>
</tr>
<tr>
<td>902-0120-0000</td>
<td>Spare, Accessory Mounting Bracket</td>
</tr>
<tr>
<td>902-0195-0000</td>
<td>Spare, T-bar ceiling mount kit for mounting to flush frame ceiling</td>
</tr>
</tbody>
</table>

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, -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.