BENEFITS

STUNNING WI-FI PERFORMANCE
Provide a great user experience no matter how challenging the environment with BeamFlex+™ adaptive antenna technology and a library 64 directional antenna patterns.

AUTOMATE OPTIMAL THROUGHPUT
ChannelFly dynamic channel technology uses machine learning to automatically find the least congested channels. You always get the highest throughput the band can support.

MULTIPLE MANAGEMENT OPTIONS
Manage the R500 from the cloud, or with on-premises physical/virtual appliances.

BETTER MESH NETWORKING
Reduce expensive cabling, and complex mesh configurations by checking a box with SmartMesh™ wireless meshing technology to dynamically create self-forming, self-healing mesh networks.

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.

With an explosion of new mobile devices, cloud applications, and Internet of Things (IoT) connections, even small- and mid-size venues now need big-league Wi-Fi. But finding the right balance between performance, features, and cost can be a major challenge.

The Ruckus R500 802.11ac indoor access point delivers the ideal combination of capacity, reliability, and affordability for medium-density locations. It’s the only 802.11ac AP in its class that includes patented Ruckus antenna optimizations and interference mitigation technologies—the same ones used in our premier high-density APs—in a low-profile form factor, at a competitive price.

The R500 is a perfect solution for a variety of medium-density enterprise and hotspot environments, including small- and midsize businesses, hotels, retail outlets, and branch offices. In hotel common areas, for example, it can provide high-quality wireless data access. In retail spaces and branch offices, it supports high-quality video, wireless IP phones, and handheld point-of-sale scanners. In busy locations supporting a wide range of users, devices, and applications, it delivers better performance and reliability than any other solution in its class.

The R500 802.11ac AP incorporates patented technologies found only in the Ruckus Wi-Fi portfolio.

• Extended coverage with patented BeamFlex+ utilizing multi-directional antenna patterns.
• Improve throughput with ChannelFly, which dynamically finds less congested Wi-Fi channels to use.

Additionally, with the R500’s easy-to-deploy mesh networking capabilities, you can connect more devices in more places, without extra cabling.

Whether you’re deploying ten or ten thousand APs, the R500 is also easy to manage through Ruckus’ appliance, virtual and cloud management options.
THE R500 INTEGRATES WITH YOUR EXISTING NETWORK INFRASTRUCTURE

Delivering best-in-class 802.11ac performance and reliability at a competitive price—making it the ideal wireless solution for mid-range enterprise and branch office applications.

HOTEL COMMON AREAS SUCH AS SHARED OFFICES

The R500 is ideal for deployment in hotel common areas to provide wireless connection to high quality data access, as well as wired connections to IP phone and guest devices.

DEPLOYMENT FOR RETAIL / BRANCH OFFICES

The R500 is ideal for deployment in retail stores to provide inconspicuous wireless connection to high quality video, wireless IP phones and data access for handheld PoS bar code scanners.
ACCESS POINT ANTENNA PATTERN

Ruckus' BeamFlex+ adaptive antennas allow the R500 AP to dynamically choose among a host of antenna patterns (up to 64 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

**Supported Rates**
- 802.11ac: 6.5 to 867Mbps (MCS0 to MCS9, NSS = 1 to 2 for VHT20/40/80)
- 802.11n: 6.5 Mbps to 300Mbps (MCS0 to MCS15)
- 802.11a/g: 54, 48, 36, 24, 18, 12, 9 , 6Mbps
- 802.11b: 11, 5.5, 2 and 1 Mbps

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

**MIMO**
- 2x2 SU-MIMO

**Spatial Streams**
- 2 SU-MIMO

**Channelization**
- 20, 40, 80MHZ

**Security**
- WPA-PSK, WPA-TKIP , WPA2 AES, 802.11i, Dynamic PSK
- WIPS/WIDS

**Other Wi-Fi Features**
- WMM, Power Save, Tx Beamforming, LDPC, STBC, 802.11r/k/v
- Hotspot
- Hotspot 2.0
- Captive Portal
- WISPr
- WMM, Power Save, Tx Beamforming, LDPC, STBC, 802.11r/k/v
- Hotspot
- Hotspot 2.0
- Captive Portal
- WISPr

### RF

**Antenna Type**
- BeamFlex+ adaptive antennas with polarization diversity
- Adaptive antenna that provides up to 64 unique antenna patterns per band

**Antenna Gain (max)**
- Up to 4dBi

**Peak Transmit Power (aggregate across MIMO chains)**
- 2.4GHz: 22dBm
- 5GHz: 22dBm

**Minimum Receive Sensitivity**
- -100dBm

**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

<table>
<thead>
<tr>
<th>Rate</th>
<th>HT20</th>
<th>HT40</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCS0</td>
<td>-92</td>
<td>-76</td>
</tr>
<tr>
<td>MCS7</td>
<td>-76</td>
<td>-89</td>
</tr>
</tbody>
</table>

### 5GHz RECEIVE SENSITIVITY

<table>
<thead>
<tr>
<th>Rate</th>
<th>VHT20</th>
<th>VHT40</th>
<th>VHT80</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCS0</td>
<td>-94</td>
<td>-76</td>
<td>-92</td>
</tr>
<tr>
<td>MCS7</td>
<td>-76</td>
<td>-92</td>
<td>-74</td>
</tr>
</tbody>
</table>

### 2.4GHz TX POWER TARGET

<table>
<thead>
<tr>
<th>Rate</th>
<th>Pout (dBm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCS0 HT20</td>
<td>22</td>
</tr>
<tr>
<td>MCS7 HT20</td>
<td>15</td>
</tr>
</tbody>
</table>

### 5GHz TX POWER TARGET

<table>
<thead>
<tr>
<th>Rate</th>
<th>Pout (dBm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCS0 VHT20</td>
<td>22</td>
</tr>
<tr>
<td>MCS7 VHT20</td>
<td>18</td>
</tr>
<tr>
<td>MCS0 VHT40, VHT80</td>
<td>22</td>
</tr>
<tr>
<td>MCS7 VHT40, VHT80</td>
<td>18</td>
</tr>
</tbody>
</table>

### PERFORMANCE AND CAPACITY

**Peak PHY Rates**
- 2.4GHz: 300Mbps
- 5GHz: 867Mbps

**Client Capacity**
- Up to 512 clients per AP

**SSID**
- Up to 43 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

### NETWORKING

**Controller Platform Support**
- SmartZone
- ZoneDirector
- Cloud Wi-Fi
- Unleashed
- Standalone

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

**IP**
- IPv4, IPv6

**VLAN**
- 802.1Q (1 per BSSID or dynamic per use 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

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1 Rx sensitivity varies by band, channel width and MCS rate.
2 Refer to Unleashed datasheets for SKU ordering information.
## PHYSICAL INTERFACES

| Ethernet           | • 2 x 1GbE ports, RJ-45 |

## PHYSICAL CHARACTERISTICS

| Physical Size       | • 15.8(L) x 15.8(W) x 4(H) cm |
|                    | • 6.2(L) x 6.2(W) x 1.57(H) in |
| Weight             | • 350g (0.77oz) |
| Mounting           | • Wall, Drop ceiling, Desk |
|                    | • Secure bracket (sold separately) |
| Physical Security  | • Hidden latching mechanism |
|                    | • Kensington lock |
|                    | • T-bar Torx |
|                    | • Bracket (902-0108-0000) Torx screw & padlock (sold separately) |
| Operating Temperature | • 0°C (32°F) to 50°C (122°F) |
| Operating Humidity  | • Up to 95%, non-condensing |

## POWER

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>Maximum Power Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>802.3af</td>
<td>• 10.5W</td>
</tr>
<tr>
<td>12VDC-Powered</td>
<td>• 11.1W</td>
</tr>
</tbody>
</table>

## SOFTWARE AND SERVICES

| Location Based Services | • SPoT |
| Network Analytics       | • SmartCell Insight (SCI) |
| Security and Policy     | • Cloudpath |

## CERTIFICATIONS AND COMPLIANCE

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

## OPTIONAL ACCESSORIES

| 902-0108-0000 | • Spare, accessory mounting bracket with padlock support |
| 902-0120-0000 | • Spare, Accessory Mounting Bracket |
| 902-0173-XXYY | • Power Adapter (12V, 1.0A, 12W) (Sold in quantities of 1 or 10) |
| 902-0162-XXYY | • PoE injector (24W) (Sold in quantities of 1, 10 or 100) |
| 902-0195-0000 | • Spare, T-bar ceiling mount kit for mounting to flush frame ceiling |
| 902-1169-XX00 | • Power Supply (12V, 2.0A, 24W) |

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.