DATA SHEET

# RUCKUS® R350

## Indoor Wi-Fi 6 (802.11ax) Access Point

## Benefits

**LATEST WI-FI STANDARDS**

The R350 access point (AP) support the latest Wi-Fi 6 (802.11ax) technology

**STUNNING WI-FI PERFORMANCE**

Patented RUCKUS technologies for performance optimization and interference mitigation delivers extended coverage and superior user experience.

**IoT READY**

Eliminate siloed networks and unify Wi-Fi and IoT technologies into one single network by using or any future wireless technologies with the addition of an optional USB module.

**MESH NETWORKING**

Dynamically create self-forming, self-healing network mesh with RUCKUS patented SmartMesh technology reducing expensive cabling, and complex configurations by checking a box.

**AFFORDABLE ENTERPRISE PERFORMANCE**

The R350 delivers unprecedented price/performance offering extended range at an affordable price.

**MULTIPLE UNIFIED MANAGEMENT OPTIONS**

Manage the R350 from the cloud, with on-premises physical/virtual appliances, or without a controller.

**KEEP EXISTING SWITCHES AND CABLES**

Designed to operate on existing PoE switches and CAT 5e cabling to minimize costly power infrastructure upgrades.

**Smaller locations can face big-time demands on their wireless infrastructure. Whether working out of a small office or connecting to a public hotspot, users are often still accessing the same high-bandwidth applications and content they'd consume anywhere else. And they expect strong, reliable connectivity. How can you provide it without breaking the bank?**

The RUCKUS® R350 delivers consistent, reliable Wi-Fi 6 (802.11ax) wireless networking at an affordable price. The AP features the patented RUCKUS technologies for performance optimization and interference mitigation found in our premier access points, delivering superior user experiences at extended ranges. But it provides them in an ultra-compact form factor built for small venues—with a price tag to match.

Also, wireless requirements within enterprises are expanding beyond Wi-Fi with BLE, Zigbee and many other non-Wi-Fi wireless technologies resulting in creation of network silos. Enterprises need a unified platform to eliminate network silos. The RUCKUS R350 is equipped to solve these challenges with a USB port supporting an optional pluggable BLE and Zigbee IoT module.

The R350 is an ideal choice for low-density enterprise and hotspot environments including small and medium-size businesses, retail locations, restaurants, and multi-tenant small offices and branch offices.

The R350 Wi-Fi 6 AP incorporates patented technologies found only in the RUCKUS Wi-Fi portfolio.

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

The R350 provides an ideal combination of features and performance for smaller environments. Additionally, it supports up to 256 clients and 16 SSIDs per AP.

Whether you're deploying ten or ten thousand APs, the R350 is also easy to manage through RUCKUS' appliance, virtual, controller-less and cloud management options.

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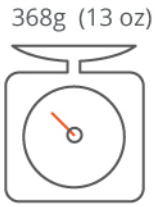


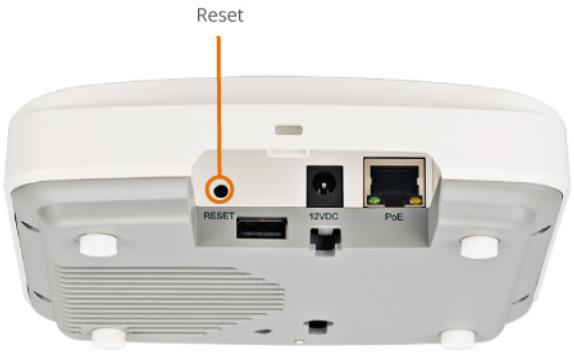


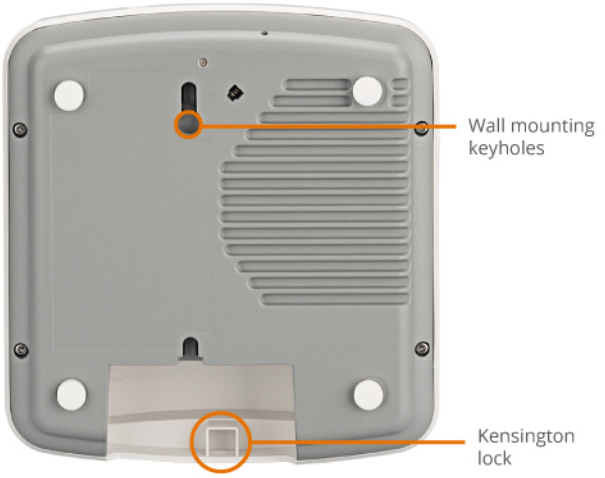

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## Access point antenna pattern

RUCKUS' BeamFlex adaptive antennas allow the R350 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.

Figure 1. Example of BeamFlex pattern

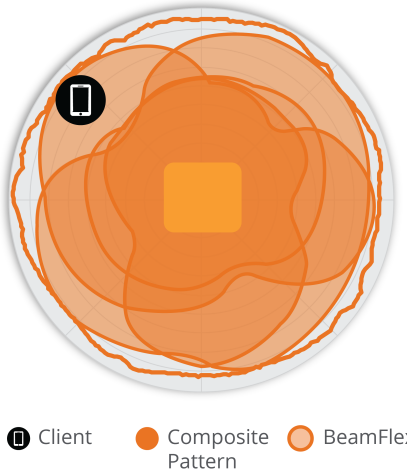



Figure 2. R350 2.4GHz Azimuth Antenna Patterns

Figure 3. R350 5GHz AzimuthAntenna Patterns

Figure 4. R350 2.4GHz Elevation Antenna Patterns

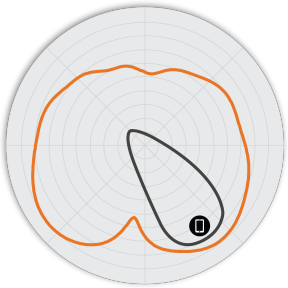
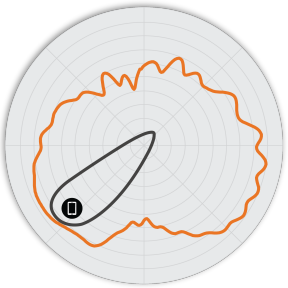


Figure 5. R350 5GHz Elevation Antenna Patterns



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® R350

## Indoor Wi-Fi 6 (802.11ax) Access Point

| WI-FI | |
|---|---|
| **Wi-Fi Standards** | • IEEE 802.11a/b/g/n/ac/ax |
| **Supported Rates** | • 802.11ax: 4 to 1774 Mbps<br>• 802.11ac: 6.5 to 867 Mbps (MCS0 to MCS9, NSS = 1 to 2 for VHT20/40/80)<br>• 802.11n: 6.5 Mbps to 300 Mbps (MCS0 to MCS15)<br>• 802.11a/g: 54, 48, 36, 24, 18, 12, 9, 6Mbps<br>• 802.11b: 11, 5.5, 2 and 1 Mbps |
| **Supported Channels** | • 2.4GHz: 1-13<br>• 5GHz: 36-64, 100-144, 149-165 |
| **MIMO** | • 2x2 SU-MIMO<br>• 2x2 MU-MIMO |
| **Spatial Streams** | • 2 streams SU/MU-MIMO 5GHz<br>• 2 streams SU/MU-MIMO 2.4GHz |
| **Radio Chains and Streams** | • 2x2:2 (5 GHz)<br>• 2x2:2 (2.4GHz) |
| **Channelization** | • 20, 40, 80MHz |
| **Security** | • WPA-PSK, WPA-TKIP, WPA2 , WPA3-Personal, WPA3-Enterprise, AES, WPA3, 802.11i, Dynamic PSK<br>• WIPS/WIDS |
| **Other Wi-Fi Features** | • WMM, Power Save, Tx Beamforming, LDPC, STBC, 802.11r/k/v<br>• Hotspot<br>• Hotspot 2.0<br>• Captive Portal<br>• WISPr |

| RF | |
|---|---|
| **Antenna Type** | • BeamFlex adaptive antennas<br>• Adaptive antenna that provides up to 64 unique antenna patterns per band |
| **Antenna Gain (max)** | • Up to 3dBi |
| **Peak Transmit Power (aggregate across MIMO chains)** | • 2.4GHz: 23 dBm<br>• 5GHz: 23 dBm |
| **Minimum Receive Sensitivity**[1] | • -101 dBm |
| **Frequency Bands** | • ISM (2.4-2.484GHz)<br>• U-NII-1 (5.15-5.25GHz)<br>• U-NII-2A (5.25-5.35GHz)<br>• U-NII-2C (5.47-5.725GHz)<br>• U-NII-3 (5.725-5.85GHz) |

**2.4GHZ RECEIVE SENSITIVITY (dBm)**

| HT20 | | HT40 | |
|---|---|---|---|
| **MCS0** | **MCS7** | **MCS0** | **MCS7** |
| -94 | -70 | -91 | -72 |
| **HE20** | | **HE40** | |
| MCS0 | MCS7 | MCS0 | MCS7 |
| -94 | -70 | -91 | -72 |

**5GHZ RECEIVE SENSITIVITY (dBm)**

| VHT20 | | VHT40 | | VHT80 | |
|---|---|---|---|---|---|
| **MCS0** | **MCS7** | **MCS0** | **MCS7** | **MCS0** | **MCS7** |
| -95 | -76 | -92 | -73 | -89 | -70 |
| **HE20** | | **HE40** | | **HE80** | |
| MCS0 | MCS7 | MCS0 | MCS7 | MCS0 | MCS7 |
| -95 | -76 | -92 | -73 | -89 | -70 |

**2.4GHZ TX POWER TARGET**

| Rate | Pout (dBm) |
|---|---|
| **MCS0 HT20** | 20 |
| **MCS7 HT20** | 15 |
| **MCS8 VHT20** | 14.5 |
| **MCS9 VHT40** | 13 |
| **MCS11 HE40** | 12 |

**5GHZ TX POWER TARGET**

| Rate | Pout (dBm) |
|---|---|
| **MCS0 VHT20** | 20 |
| **MCS7 VHT20** | 17 |
| **MCS0 VHT40, VHT80** | 20 |
| **MCS7 VHT40, VHT80** | 17 |
| **MCS11, HE20, HE40, HE80** | 13 |

| PERFORMANCE AND CAPACITY | |
|---|---|
| **Peak PHY Rates** | • 2.4GHz: 574Mbps<br>• 5 GHz: 1200Mbps |
| **Client Capacity** | • Up to 256 clients per AP |
| **SSID** | • Up to 16 per AP |

| RUCKUS RADIO MANAGEMENT | |
|---|---|
| **Antenna Optimization** | • BeamFlex+<br>• Polarization Diversity with Maximal Ratio Combining (PD-MRC) |
| **Wi-Fi Channel Management** | • ChannelFly<br>• Background Scan Based |
| **Client Density Management** | • Adaptive Band Balancing<br>• Client Load Balancing<br>• Airtime Fairness<br>• Airtime-based WLAN Prioritization |
| **SmartCast Quality of Service** | • QoS-based scheduling<br>• Directed Multicast<br>• L2/L3/L4 ACLs |
| **Mobility** | • SmartRoam |
| **Diagnostic Tools** | • SpeedFlex |

[1] Rx sensitivity varies by band, channel width and MCS rate.

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## Indoor Wi-Fi 6 (802.11ax) Access Point

| NETWORKING | |
|---|---|
| **Controller Platform Support** | • SmartZone<br>• ZoneDirector<br>• Unleashed[2]<br>• Cloud<br>• 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<br>• VLAN Pooling<br>• Port-based |
| **802.1x** | • Authenticator & Supplicant |
| **Tunnel** | • L2TP, GRE, Soft-GRE |
| **Policy Management Tools** | • Application Recognition and Control<br>• Access Control Lists<br>• Device Fingerprinting<br>• Rate Limiting |

| PHYSICAL INTERFACES | |
|---|---|
| **Ethernet** | • 1 x 1GbE port, RJ-45 |
| **USB** | • 1 USB 2.0 Port, Type A |

| PHYSICAL CHARACTERISTICS | |
|---|---|
| **Physical Size** | • 14.60(L) x 15.59(W) x 3.93(H) cm<br>• 5.75(L) x 6.14(W) x 1.55(H) in |
| **Weight** | • 368g (13 oz) |
| **Mounting** | • Wall, Drop ceiling, Desk<br>• Secure bracket (sold separately) |
| **Physical Security** | • Hidden latching mechanism<br>• T-bar Torx |
| **Operating Temperature** | • 0 °C (32 °F) to 40 °C (104 °F) |
| **Operating Humidity** | • Up to 95%, non-condensing |

| POWER[3] | |
|---|---|
| **Power Supply** | **Maximum Power Consumption** |
| **PoE (Full Functionality)** | • 12.62W |
| **DC input** | • 11.4 W |

| CERTIFICATIONS AND COMPLIANCE | |
|---|---|
| **Wi-Fi Alliance[4]** | • Wi-Fi CERTIFIED™ a, b, g, n, ac<br>• Wi-Fi CERTIFIED 6™<br>• WPA3™ -Enterprise, Personal<br>• Wi-Fi Enhanced Open™<br>• Wi-Fi Agile Multiband™<br>• Passpoint®<br>• Vantage<br>• WMM |
| **Standards Compliance[5]** | • EN 60950-1 Safety<br>• EN 60601-1-2 Medical<br>• EN 61000-4-2/3/5 Immunity<br>• EN 50121-1 Railway EMC<br>• EN 50121-4 Railway Immunity<br>• IEC 61373 Railway Shock & Vibration<br>• UL 2043 Plenum<br>• EN 62311 Human Safety/RF Exposure<br>• WEEE & RoHS<br>• ISTA 2A Transportation |

| SOFTWARE AND SERVICES | |
|---|---|
| **Location Based Services** | • SPoT |
| **Network Analytics** | • SmartCell Insight (SCI) |
| **Security and Policy** | • Cloudpath |

[2] Refer to Unleashed datasheets for SKU ordering information.

[3] Max power varies by country setting, band, and MCS rate.

[4] For complete list of WFA certifications, please see the Wi-Fi Alliance website.

[5] For current certification status, please see the price list.

# RUCKUS® R350

## Indoor Wi-Fi 6 (802.11ax) Access Point

| ORDERING INFORMATION | |
|---|---|
| **901-R350-XX02** | • R350 dual-band (5GHz and 2.4GHz concurrent) 802.11ax wireless access point, 2x2:2 + 2x2:2 streams, adaptive antennas, dual ports, PoE support. Plenum rated. Includes adjustable acoustic drop ceiling bracket. 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.

| OPTIONAL ACCESSORIES | |
|---|---|
| **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 |
| **902-0120-0000** | • Spare, Accessory Mounting Bracket |
| **902-0173-XXYY** | • Power Adapter (12V, 1.0A, 12W) (Sold in quantities of 1 or 10) |

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.

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