

# RUCKUS® R770

Indoor Wi-Fi 7 (802.11be) Access Point with 12.22 Gbps Data Rate



## Benefits

### Connect more devices simultaneously

Improve device performance, by enabling more simultaneous device connections with built-in 8 spatial streams (2x2:2 in 2.4GHz, 4x4:4 in 5GHz, 2x2:2 in 6GHz) technology. 12.22 Gbps Combined data rate.

### High client density and performance

Provides exceptional end-user experience within large meeting halls, general enterprise spaces, and large classrooms.

### BeamFlex+ Adaptive Antenna Technology

For greater speed, fewer errors, and instant bandwidth delivery, RUCKUS BeamFlex+ patented technology offers first-of-its-kind smart antenna technology that maximizes signal coverage, throughput, and network capacity and work with any client. It further increases MIMO diversity gain and maximizes spatial multiplexing potential.

### Converged Access Point

Allows customers to eliminate siloed networks and unify Wi-Fi and non Wi-Fi wireless technologies into one single network by using built-in BLE or Zigbee with support for Matter and Thread\*. Expandable to future wireless technologies through USB port.

### 10 GbE eliminates bottleneck

Optimized multi-gigabit Wi-Fi performance delivered using the built-in 1/2.5/5/10GbE port to connect to multi-gigabit switches.

### Multiple management options

Manage the R770 with on premise physical/ virtual appliances and control auto-provisioning for faster deployment and seamless firmware upgrades.

### Enhanced Security

The latest Wi-Fi security standard with WPA3 and receive enhanced protection from man-in-the-middle attacks. Adds the power of RUCKUS DPSK3 to WPA3/SAE combining enhanced security with the flexibility and ease of use of dynamic passphrase to secure network access.

### More Than Wi-Fi

Support solutions beyond Wi-Fi with RUCKUS IoT Suite, RUCKUS AI, RUCKUS One, RUCKUS Cloudpath Enrollment System and onboarding software

Bandwidth-hungry ultra-high definition video, virtual reality, Internet of Things (IoT), an explosion of new devices and content. With these kinds of demands, organizations in every industry need more from their Wi-Fi. But with hundreds of devices and nonstop wireless noise and interference, busy indoor spaces can make challenging wireless environments.

The dawn of the Wi-Fi 7 era ushers in a new wave of possibilities. With its groundbreaking advancements in speed, capacity, latency, and reliability, Wi-Fi 7 has the potential to transform the way we connect and interact with the digital world.

From seamless streaming of ultra-high-definition content to immersive virtual and augmented reality experiences, Wi-Fi 7 enables applications that were previously unimaginable. Real-time social gaming can reach new heights, allowing for lag-free, competitive multiplayer experiences with unparalleled responsiveness.

The Internet of Things (IoT) also receive a significant boost, as Wi-Fi 7 supports a massive number of connected devices simultaneously, facilitating smart homes, smart cities, and intelligent automation on a grand scale.

Moreover, industries such as hospitality and education can benefit immensely from Wi-Fi 7's low latency and high reliability. Other verticals like, MDUs, large public venues and service providers gain greatly from Wi-Fi 7 unprecedented advancements in speed and capacity.

The RUCKUS R770 is a high-end Wi-Fi 7, tri-band concurrent indoor AP that delivers 8 spatial streams (2x2:2 in 2.4GHz, 4x4:4 in 5GHz, 2x2:2 in 6GHz) and supports Wi-Fi 7 features such as, Multi-Link-Operation (MLO), Preamble Puncturing, 4K QAM Modulation and 320MHz channels. It delivers industry-leading performance environments with a combined data rate of 12.22 Gbps. Furthermore, a 10 Gbps Ethernet port eliminates wired backhaul bottleneck for full use of available Wi-Fi capacity.

Wireless requirements within enterprises are expanding beyond Wi-Fi. The R770 has one built-in IoT radio offering onboard BLE or Zigbee capabilities. The R770 is a converged access point that allows customers to seamlessly integrate any new wireless technologies with the USB port.

The R770 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/8K video transmissions, while supporting latency sensitive voice and data applications with stringent quality-of-service requirements.

The R770, with built-in RUCKUS exclusive technology, 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® + Adaptive Antennas:** Extended coverage range and optimized throughput with patented dynamic multi-directional antennas and radio patterns and work with any client.

Whether you are deploying ten or ten thousand APs, the R770 is also easy to manage through RUCKUS multiple management options including cloud based and on premises controllers.

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RUCKUS BeamFlex® Smart Adaptive Antenna



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## Access Point BeamFlex Antenna Pattern

RUCKUS' BeamFlex+ adaptive antennas allow the R770 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

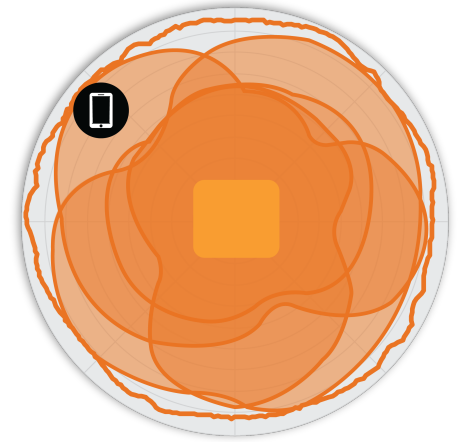


Figure 2. R770 2.4GHz Azimuth Antenna Patterns



Figure 3. R770 5GHz Azimuth Antenna Patterns



Figure 4. R770 6GHz Azimuth Antenna Patterns



Figure 5. R770 2.4GHz Elevation Antenna Patterns

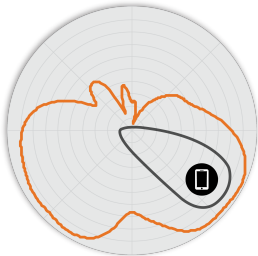


Figure 6. R770 5GHz Elevation Antenna Patterns

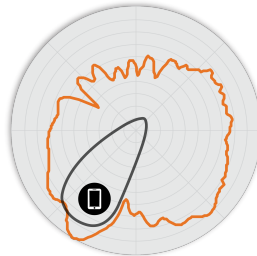
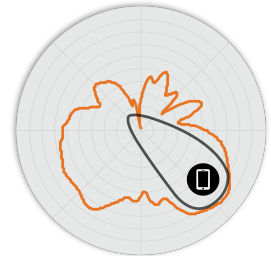


Figure 7. R770 6GHz Elevation Antenna Patterns



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.

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## Indoor Wi-Fi 7 (802.11be) Access Point with 12.22 Gbps Data Rate

| Wi-Fi                    |  |
|--------------------------|--|
| Wi-Fi Standards          | <ul style="list-style-type: none"> <li>IEEE 802/11a/b/g/n/ac/ax/be, Wi-Fi 7</li> </ul>   |
| Supported Rates          | <ul style="list-style-type: none"> <li>802.11be: 4 to 5765 Mbps</li> <li>802.11ax: 4 to 4804 Mbps</li> <li>802.11ac: 6.5 to 866 Mbps</li> <li>802.11n: 6.5 to 300 Mbps</li> <li>802.11a/g: 6 to 54 Mbps</li> <li>802.11b: 1 to 11 Mbps</li> </ul>  |
| Supported Channels       | <ul style="list-style-type: none"> <li>2.4GHz: 1-13</li> <li>5GHz: 36-64, 100-144, 149-165</li> <li>6GHz: 1-233</li> </ul>   |
| MIMO                     | <ul style="list-style-type: none"> <li>2x2 (2.4 and 6 GHz) and 4x4 (5 GHz) SU-MIMO</li> <li>2x2 (2.4 and 6 GHz) and 4x4 (5 GHz) MU-MIMO</li> </ul>   |
| Spatial Streams          | <ul style="list-style-type: none"> <li>2 (2.4 and 6 GHz) or 4 (5 GHz) for SU-MIMO &amp; MU-MIMO</li> </ul>   |
| Radio Chains and Streams | <ul style="list-style-type: none"> <li>2x2:2 (2.4 and 6 GHz), 4x4:4 (5 GHz)</li> </ul>   |
| Channelization           | <ul style="list-style-type: none"> <li>20, 40, 80, 160, 320 MHz</li> </ul>   |
| Security                 | <ul style="list-style-type: none"> <li>WEP, WPA, WPA-PSK, WPA2, WPA2-PSK, WPA3, WPA3-SAE, OWE, PMF (802.11w), Dynamic PSK</li> <li>WIPS/WIDS</li> </ul>  |
| Other Wi-Fi Features     | <ul style="list-style-type: none"> <li>WMM, Power Save, Tx Beamforming, LDPC, STBC, 802.11r/k/v, MBO</li> <li>MLO (Multi-link operation), Preamble Puncturing</li> <li>Web Authentication and Guest Access</li> <li>Hotspot, Hotspot 2.0</li> <li>Captive Portal</li> <li>WISPr</li> </ul> |

| RF   |  |
|--|--|
| Antenna Type   | <ul style="list-style-type: none"> <li>BeamFlex+ adaptive antennas with polarization diversity</li> <li>Adaptive antenna that provides 4,000+ unique antenna patterns per band</li> </ul>  |
| Antenna Gain (max)                                   | <ul style="list-style-type: none"> <li>Up to 4dBi</li> </ul>   |
| Peak Transmit Power (Tx port/chain + Combining gain) | <ul style="list-style-type: none"> <li>2.4GHz: 26dBm</li> <li>5GHz: 28dBm</li> <li>6GHz: 25dBm</li> </ul>  |
| Frequency Bands                                      | <ul style="list-style-type: none"> <li>ISM (2.4-2.484GHz)</li> <li>U-NII-1 (5.15-5.25GHz)</li> <li>U-NII-2A (5.25-5.35GHz)</li> <li>U-NII-2C (5.47-5.725GHz)</li> <li>U-NII-3 (5.725-5.85GHz)</li> <li>U-NII-5 (5.925-6.425GHz)</li> <li>U-NII-6 (6.425-6.525GHz)</li> <li>U-NII-7 (6.525-6.875GHz)</li> <li>U-NII-8 (6.875-7.125GHz)</li> </ul> |

| 2.4GHZ RECEIVE SENSITIVITY (dBm) |      |       |       |            |      |       |       |
|----------------------------------|------|-------|-------|------------|------|-------|-------|
| HT20                             |      | HT40  |       | VHT20      |      | VHT40 |       |
| MCS0                             | MCS7 | MCS0  | MCS7  | MCS0       | MCS7 | MCS0  | MCS7  |
| -97                              | -79  | -94   | -76   | -97        | -79  | -94   | -76   |
| HE20/EHT20                       |      |       |       | HE40/EHT40 |      |       |       |
| MCS0                             | MCS9 | MCS11 | MCS13 | MCS0       | MCS9 | MCS11 | MCS13 |
| -97                              | -74  | -68   | -61   | -94        | -71  | -65   | -58   |

| 5GHZ RECEIVE SENSITIVITY (dBm) |      |       |            |            |       |            |      |            |              |      |       |
|--------------------------------|------|-------|------------|------------|-------|------------|------|------------|--------------|------|-------|
| HT20/VHT20                     |      |       |            | HT40/VHT40 |       |            |      | HT80/VHT80 |              |      |       |
| MCS0                           | MCS7 | MCS8  | MCS9       | MCS0       | MCS7  | MCS8       | MCS9 | MCS0       | MCS7         | MCS8 | MCS9  |
| -100                           | -82  | -79   | -76        | -97        | -79   | -76        | -73  | -94        | -76          | -73  | -70   |
| HE20/EHT20                     |      |       | HE40/EHT40 |            |       | HE80/EHT80 |      |            | HE160/EHT160 |      |       |
| MCS0                           | MCS9 | MCS13 | MCS0       | MCS9       | MCS13 | MCS0       | MCS9 | MCS13      | MCS0         | MCS9 | MCS13 |
| -100                           | -76  | -64   | -97        | -73        | -61   | -94        | -70  | -58        | -91          | -67  | -55   |

| 6GHZ RECEIVE SENSITIVITY (dBm) |      |       |       |              |      |       |       |
|--------------------------------|------|-------|-------|--------------|------|-------|-------|
| HE20/EHT20                     |      |       |       | HE40/EHT40   |      |       |       |
| MCS0                           | MCS9 | MCS11 | MCS13 | MCS0         | MCS9 | MCS11 | MCS13 |
| -96                            | -73  | -67   | -61   | -93          | -70  | -64   | -58   |
| HE80/EHT80                     |      |       |       | HE160/EHT160 |      |       |       |
| MCS0                           | MCS9 | MCS11 | MCS13 | MCS0         | MCS9 | MCS11 | MCS13 |
| -90                            | -67  | -61   | -55   | -87          | -64  | -58   | -58   |

| 2.4GHZ TX POWER TARGET (PER CHAIN) |            |
|------------------------------------|------------|
| Rate                               | Pout (dBm) |
| MCS0, HT20                         | 23         |
| MCS7, HT20                         | 19         |
| MCS9, VHT20                        | 17.5       |
| MCS11, HE40                        | 16.5       |
| MCS13, EHT40                       | 15         |

| 5GHZ TX POWER TARGET (PER CHAIN) |            |
|----------------------------------|------------|
| Rate                             | Pout (dBm) |
| MCS0, HT40                       | 22         |
| MCS7, HT40                       | 20         |
| MCS9, VHT80                      | 18.5       |
| MCS11, HE160                     | 17         |
| MCS13, EHT160                    | 16         |

| 6GHZ TX POWER TARGET (PER CHAIN) |            |
|----------------------------------|------------|
| Rate                             | Pout (dBm) |
| MCS0, HT40                       | 22         |
| MCS7, HT40                       | 17.5       |
| MCS9, VHT80                      | 16.5       |
| MCS11, HE160                     | 15         |
| MCS13, EHT320                    | 13         |

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| POWER CONSUMPTION     |  |   |   |
|-----------------------|--|---|---|
| Mode                  | Power Consumption                              | System Configuration  | Wi-Fi Radios  |
| DC Power              | 32W<br>(Average/RMS)                           | <ul style="list-style-type: none"> <li>10Gbps Ethernet Enabled</li> <li>1Gbps Ethernet Enabled</li> <li>USB Enabled (3W)</li> <li>IoT Enabled (selectable)</li> </ul> | 2.4GHz (2x2) Tx 23dBm<br>5GHz (4x4) Tx 22dBm<br>6GHz (2x2) Tx 22dBm |
| 802.3bt5<br>PoH, uPoE | 32W<br>(Average/RMS)<br><br>40W<br>(Peak/LLDP) | <ul style="list-style-type: none"> <li>10Gbps Ethernet Enabled</li> <li>1Gbps Ethernet Enabled</li> <li>USB Enabled (3W)</li> <li>IoT Enabled (selectable)</li> </ul> | 2.4GHz (2x2) Tx 23dBm<br>5GHz (4x4) Tx 22dBm<br>6GHz (2x2) Tx 22dBm |
| 802.3at               | 25.5W  | <ul style="list-style-type: none"> <li>10Gbps Ethernet Enabled</li> <li>1Gbps Ethernet Disabled</li> <li>USB Disabled (0W)</li> <li>IoT Disabled</li> </ul>           | 2.4GHz (2x2) Tx 16dBm<br>5GHz (4x4) Tx 15dBm<br>6GHz (2x2) Tx 16dBm |

| PERFORMANCE AND CAPACITY |  |
|--------------------------|--|
| Peak PHY Rates           | <ul style="list-style-type: none"> <li>2.4GHz: 689 Mbps</li> <li>5GHz: 5765 Mbps</li> <li>6GHz: 5765 Mbps</li> </ul> |
| Client Capacity          | <ul style="list-style-type: none"> <li>Up to 1024 clients per AP</li> </ul>  |
| SSID                     | <ul style="list-style-type: none"> <li>Up to 36 per AP</li> </ul>  |

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

| NETWORKING                  |  |
|-----------------------------|--|
| Controller Platform Support | <ul style="list-style-type: none"> <li>SmartZone</li> <li>RUCKUS Unleashed*</li> <li>RUCKUS One</li> </ul>   |
| Mesh                        | <ul style="list-style-type: none"> <li>SmartMesh™ wireless meshing technology. Self-healing Mesh in 2.4 GHz, 5GHz, and 6GHz</li> </ul>   |
| IP                          | <ul style="list-style-type: none"> <li>IPv4, IPv6, dual-stack</li> </ul>   |
| VLAN                        | <ul style="list-style-type: none"> <li>802.1Q (1 per BSSID or dynamic per user based on RADIUS)</li> <li>VLAN Pooling</li> <li>Port-based</li> </ul>   |
| 802.1x                      | <ul style="list-style-type: none"> <li>Authenticator &amp; Supplicant</li> </ul>   |
| Tunnel                      | <ul style="list-style-type: none"> <li>GRE, Soft-GRE</li> </ul>  |
| Policy Management Tools     | <ul style="list-style-type: none"> <li>Application Recognition and Control</li> <li>Access Control Lists</li> <li>Device Fingerprinting</li> <li>Rate Limiting</li> <li>URL Filtering</li> </ul> |
| IoT Onboard                 | <ul style="list-style-type: none"> <li>Integrated BLE or Zigbee (one IoT radio)</li> <li>Matter &amp; Thread support*</li> </ul>   |

| PHYSICAL INTERFACES |  |
|---------------------|--|
| Ethernet            | <ul style="list-style-type: none"> <li>One 100M/1/2.5/5/10G Ethernet (PoE) port and one 10M/100M/1G Ethernet port</li> <li>Power over Ethernet (802.3af/at/bt) with Category 6a (or better) cable</li> <li>LLDP support</li> </ul> |
| USB                 | <ul style="list-style-type: none"> <li>1 USB 2.0 port, Type A</li> </ul>   |

| PHYSICAL CHARACTERISTICS |  |
|--------------------------|--|
| Physical Size            | <ul style="list-style-type: none"> <li>23.3cm (L), 23.3cm (W), 5.9cm (H)</li> <li>9.2in (L) x 9.2in (W) x 2.3in (H)</li> </ul> |
| Weight                   | <ul style="list-style-type: none"> <li>1.36kg</li> <li>3lbs</li> </ul>   |
| Mounting                 | <ul style="list-style-type: none"> <li>Wall, acoustic ceiling, desk</li> <li>Bracket (902-0120-0000)</li> </ul>                |
| Physical Security        | <ul style="list-style-type: none"> <li>Padlock feature</li> <li>Secure bracket (sold separately) (902-0120-0000)</li> </ul>    |
| Operating Temperature    | <ul style="list-style-type: none"> <li>-10 °C (14°F) to 50°C (122°F)</li> </ul>  |
| Operating Humidity       | <ul style="list-style-type: none"> <li>Up to 95%, non-condensing</li> </ul>  |

\* Expected in a future software release

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## CERTIFICATIONS AND COMPLIANCE

|   |  |
|---|--|
| <b>Wi-Fi Alliance<sup>1</sup></b>       | <ul style="list-style-type: none"><li>• Wi-Fi CERTIFIED™ a, b, g, n, ac, ax, be (Wi-Fi 6, Wi-Fi 7)</li><li>• Passpoint®, Vantage</li></ul>   |
| <b>Standards Compliance<sup>2</sup></b> | <ul style="list-style-type: none"><li>• IEC/EN/UL 60950-1 Safety</li><li>• IEC/EN/UL 62368-1 Safety</li><li>• EN 60601-1-2 Medical</li><li>• EN 61000-4-2/3/5 Immunity</li><li>• EN 50121-1 Railway EMC</li><li>• EN 50121-4 Railway Immunity</li><li>• IEC 61373 Railway Shock &amp; Vibration</li><li>• UL 2043 Plenum</li><li>• EN 62311 Human Safety/RF Exposure</li><li>• WEEE &amp; RoHS</li><li>• ISTA 2A Transportation</li><li>• GNSS Geolocation – (Rx mode only, L1 &amp; L5 bands)</li><li>• Zigbee &amp; BLE (IEEE 802.15 in 2.4GHz ISM band)</li></ul> |

## SOFTWARE AND SERVICES

|                             |  |
|-----------------------------|--|
| <b>Cloud Based Services</b> | <ul style="list-style-type: none"><li>• RUCKUS One</li></ul>                                     |
| <b>Network Analytics</b>    | <ul style="list-style-type: none"><li>• RUCKUS AI (Formerly known as RUCKUS Analytics)</li></ul> |
| <b>Security and Policy</b>  | <ul style="list-style-type: none"><li>• Cloudpath</li></ul>                                      |

## ORDERING INFORMATION

|                      |   |
|----------------------|---|
| <b>901-R770-XX00</b> | <ul style="list-style-type: none"><li>• RUCKUS R770 Wi-Fi 7 tri-band concurrent wireless Access Point with 2x2:2 (2.4GHz) + 4x4:4 (5GHz) + 2x2:2 (6GHz). Wi-Fi 7 in all three bands. 6GHz LPI mode and SP mode support with AFC. Software configurable to 2x2 (2.4GHz) + 4x4 (5GHz) dual-band mode. BeamFlex+, one 10/5/2.5/1-Gigabit Ethernet backhaul, one 1-Gigabit port, PoH/uPoE/802.3bt PoE support, onboard BLE and Zigbee selectable IoT radio, USB 2.0, TPM 2.0, and Secure Boot. Adjustable acoustic drop ceiling bracket included. Power adapter not included. Includes Limited Lifetime Warranty.</li></ul> |
|----------------------|---|

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

|                      |  |
|----------------------|--|
| <b>902-1180-XX00</b> | <ul style="list-style-type: none"><li>• Multigigabit PoE injector (2.5/5/10)-BaseT PoE port, 60W</li></ul> |
| <b>902-0120-0000</b> | <ul style="list-style-type: none"><li>• Spare, Accessory Mounting Bracket</li></ul>                        |
| <b>902-1170-XX00</b> | <ul style="list-style-type: none"><li>• Power Supply (48V, 0.75A, 36W)</li></ul>                           |
| <b>902-0196-0000</b> | <ul style="list-style-type: none"><li>• T-bar Bracket</li></ul>  |

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.

<sup>1</sup> For complete list of WFA certifications, please see Wi-Fi Alliance website.

<sup>2</sup> For current certification status, please see price list.

## About RUCKUS Networks

RUCKUS Networks builds and delivers purpose-driven networks that perform in the demanding environments of the industries we serve. Together with our network of trusted go-to-market partners, we empower our customers to deliver exceptional experiences to the guests, students, residents, citizens and employees who count on them.

[www.ruckusnetworks.com](http://www.ruckusnetworks.com)

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

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