# R730

Indoor 802.11ax 8x8:8 Wi-Fi Access Point
with Multi-gigabit Backhaul

**RUCKUS™**
an ARRIS company

## DATA SHEET

## BENEFITS

### CONNECT MORE DEVICES SIMULTANEOUSLY
Improve device performance, by enabling more simultaneous device connections with built-in 12 spatial streams (8x8:8 in 5GHz, 4x4:4 in 2.4GHz), MU-MIMO and OFDMA technology.

### ULTRA-HIGH-DENSITY PERFORMANCE
Provides exceptional end-user experience within stadiums, large public venues, convention centers and school auditoriums with the Ruckus Ultra-High-Density Technology Suite.

### ENHANCED SECURITY
Upgrade to the latest Wi-Fi security standard with WPA3 and receive enhanced protection from man-in-the-middle attacks in the most secure way.

### MULTI-GIGABIT ACCESS SPEEDS
Optimized multi-gigabit Wi-Fi performance delivered using built-in 5GbE/2.5GbE Ethernet ports to connect to multi-gigabit switches.

### DEVICE MANAGEMENT OPTIONS
Manage the R730 with on premise physical/virtual appliances and control auto-provisioning for faster deployment and seamless firmware upgrades.

### BETTER MESH NETWORKING
Minimize complexity by reducing expensive cabling with SmartMesh™ that dynamically creates self-forming, self-healing mesh networks.

### 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.

### MORE THAN WI-FI
Support services beyond Wi-Fi with Ruckus IoT Suite, Cloudpath security and onboarding software, SPoT Wi-Fi locating engine, and SCI network analytics.

The R730 is based on the latest Wi-Fi standard, 802.11ax 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 Ruckus R730 is our highest capacity dual-band, dual-concurrent 802.11ax AP that supports 12 spatial streams (8x8:8 in 5GHz, 4x4:4 in 2.4GHz). The R730, with OFDMA and MU-MIMO capabilities, efficiently manages more than 1K client connections with increased capacity, improved coverage and performance in ultra-high dense environments. Furthermore, 5 Gbps multi-gigabit Ethernet ports enhances backhaul capacity.

Additionally, the R730 is IoT- and LTE-ready, and supports wireless standards beyond Wi-Fi in combination with the Ruckus IoT Suite and our CBRS/OpenG modules.

The R730 addresses the increasing client demands in transit hubs, auditoriums, stadiums, conference centers, and other highly trafficked 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 R730 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're deploying ten or ten thousand APs, the R730 is also easy to manage through Ruckus' appliance and virtual management options.
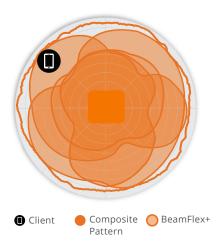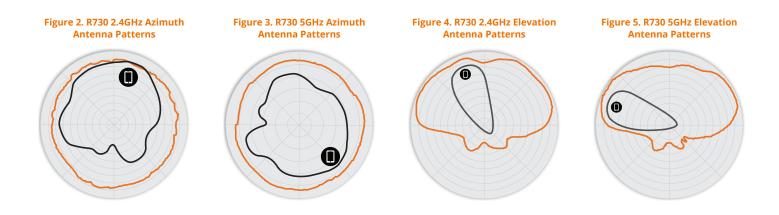
## ACCESS POINT ANTENNA PATTERN

Ruckus' BeamFlex+ adaptive antennas allow the R730 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+

**Figure 2. R730 2.4GHz Azimuth Antenna Patterns**



**Figure 3. R730 5GHz Azimuth Antenna Patterns**



**Figure 4. R730 2.4GHz Elevation Antenna Patterns**



**Figure 5. R730 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.

## WI-FI

| | |
|---|---|
| Wi-Fi Standards | • IEEE 802.11a/b/g/n/ac/ax |
| Supported Rates | • 802.11ax: 4 to 4800 Mbps<br>• 802.11ac: 6.5 to 3467 Mbps<br>• 802.11n: 6.5 to 600 Mbps<br>• 802.11a/g: 6 to 54 Mbps<br>• 802.11b: 1 to 11 Mbps |
| Supported Channels | • 2.4GHz: 1-13<br>• 5GHz: 36-64, 100-144, 149-165 |
| MIMO | • 8x8 MU-MIMO<br>• 8x8 SU-MIMO |
| Spatial Streams | • 8 MU-MIMO<br>• 8 SU-MIMO |
| Channelization | • 20, 40, 80MHz |
| Modulation | • OFDMA (up to 1024-QAM) |
| Security | • WPA-PSK, WPA-TKIP, WPA2 AES, 802.11i, Dynamic PSK<br>• WIPS/WIDS |
| Other Wi-Fi Features | • WMM, Power Save, TxBF, LDPC, STBC, 802.11r/k/v<br>• Hotspot<br>• Hotspot 2.0<br>• Captive Portal<br>• WISPr |

## RF

| | |
|---|---|
| Antenna Type | 2.4GHz Antennas<br>• Omni: 2 Antennas<br>• BeamFlex+ Adaptive: 2 Antennas<br>• Polarization: 3 Vertical & 1 Horizontal<br>5GHz Antennas<br>• Omni: 4 Antennas<br>• BeamFlex+ adaptive: 4 Antennas<br>• Polarization: 6 Vertical & 2 Horizontal |
| Antenna Gain (max) | • 2.4GHz: 3 dBi<br>• 5GHz: 3 dBi |
| Frequency Bands | • 2.4 - 2.484 GHz<br>• 5.17 - 5.33 GHZ<br>• 5.49 - 5.71 GHz<br>• 5.735 - 5.835 GHz |

## 2.4GHZ RECEIVE SENSITIVITY

| HT20 | | HT40 | | VHT20 | | VHT40 | |
|---|---|---|---|---|---|---|---|
| MCS0 | MCS7 | MCS0 | MCS7 | MCS0 | MCS7 | MCS0 | MCS7 |
| -91 | -73 | -88 | -70 | -91 | -73 | -88 | -70 |

| HE20 | | | | HE40 | | | |
|---|---|---|---|---|---|---|---|
| MCS0 | MCS7 | MCS9 | MCS11 | MCS0 | MCS7 | MCS9 | MCS11 |
| -91 | -73 | -68 | -62 | -88 | -70 | -65 | -59 |

## 5GHZ RECEIVE SENSITIVITY

| VHT20 | | | | VHT40 | | | | VHT80 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCS0 | MCS7 | MCS8 | MCS9 | MCS0 | MCS7 | MCS8 | MCS9 | MCS0 | MCS7 | MCS8 | MCS9 |
| -91 | -72 | -69 | — | -88 | -69 | — | -65 | -85 | -66 | — | -62 |

| HE20 | | | | HE40 | | | | HE80 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCS0 | MCS7 | MCS9 | MCS11 | MCS0 | MCS7 | MCS9 | MCS11 | MCS0 | MCS7 | MCS9 | MCS11 |
| -91 | -72 | -68 | -62 | -88 | -69 | -65 | -59 | -85 | -66 | -62 | -56 |

## 2.4GHZ TX POWER TARGET

| Rate | Pout (dBm) - Full Power | Pout (dBm) - 802.3at |
|---|---|---|
| MCS0 HT20 | 19 | 18 |
| MCS7 HT20 | 16 | 16 |
| MCS8 VHT20 | 15 | 15 |
| MCS9 VHT40 | 14 | 14 |
| MCS11 HE40 | 12 | 12 |

## 5GHZ TX POWER TARGET

| Rate | Pout (dBm) - Full Power | Pout (dBm) - 802.3at |
|---|---|---|
| MCS0 VHT20 | 22 | 20 |
| MCS7 VHT40, VHT80 | 16 | 16 |
| MCS9 VHT40, VHT80 | 15 | 15 |
| MCS11 HE20, HE40, HE80 | 12 | 12 |

## PERFORMANCE AND CAPACITY

| | |
|---|---|
| Peak PHY Rates | • 2.4GHz: 1.148 Gbps (11ax)<br>• 5GHz: 4.8 Gbps (11ax) |
| Client Capacity | • Up to 1024 clients per AP |
| Simultaneous VoIP Clients | • Up to 60 per AP |
| SSID | • Up to 16 per radio |

## RUCKUS RADIO MANAGEMENT

| | |
|---|---|
| Antenna Optimization | • BeamFlex+<br>• PD-MRC |
| Wi-Fi Channel Management | • ChannelFly |
| Client Density Management | • Band Balancing<br>• Client Load Balancing<br>• Airtime Fairness<br>• Airtime-based WLAN Prioritization |
| Queuing & Scheduling | • SmartCast |
| Mobility | • SmartRoam |
| Diagnostic Tools | • Spectrum Analysis<br>• SpeedFlex |
| High Density Deployments (RF Innovations) | • Perpacket Adaptive Power<br>• Adaptive Wi-Fi Cell Size<br>• Transient Client Management<br>• Airtime Decongestion |

## NETWORKING

| | |
|---|---|
| **Controller Platform Support** (initial release) | • SmartZone<br>• ZD<br>• Standalone |
| **Mesh** | • SmartMesh™ wireless meshing technology |
| **IP** | • IPv4, IPv6 |
| **VLAN** | • 802.1Q<br>• BSSID-based (16 BSSIDs / radio)<br>• Port-based<br>• Dynamic, per user based on RADIUS |
| **802.1x** | • Wired & wireless<br>• Authenticator & Supplicant |
| **Tunnel** | • RuckusGRE, SoftGRE |
| **Policy Management Tools** | • Application Recognition and Control<br>• Access Control Lists<br>• Device Fingerprinting |

## OTHER RADIO TECHNOLOGIES

| | |
|---|---|
| **IoT** | • BLE, Zigbee |

## PHYSICAL INTERFACES

| | |
|---|---|
| **Ethernet** | • 1x 1/2.5/5 Gbps port, RJ-45<br>• 1x 10/100/1000 Mbps port, RJ-45 |
| **USB** | • 1 USB 2.0 port, Type A |

## PHYSICAL CHARACTERISTICS

| | |
|---|---|
| **Physical Size** | • 22.19 x 24.96 x 5.8 cm<br>• 8.74 x 9.83 x 2.28 in. |
| **Weight** | • 1.6 kg<br>• 3.52 lbs |
| **Mounting** | • Wall, Acoustic ceiling, Desk<br>• Secure Bracket (sold separately) |
| **Physical Security** | • Hidden Latching Mechanism<br>• Kensington Lock Hole<br>• T-Bar Torx |
| **Operating Temperature** | • -10°C (14°F) to 50°C (122°F) |
| **Operating Humidity** | • Up to 95%, non-condensing |

## POWER CONSUMPTION

| Mode | Power Consumption | System Configuration | Wi-Fi Radios |
|---|---|---|---|
| DC Power, PoH, uPoE (Idle) | 16.1W | • 5Gbps & 1Gbps Ethernet enabled<br>• USB Enabled (3W)<br>• Zigbee/BLE Enabled (0.5W) | 2.4GHz (4x4) enabled<br>5GHz (8x8) enabled (no clients associated) |
| DC Power, PoH, uPoE (Max) | 31.0W | • 5Gbps & 1Gbps Ethernet enabled<br>• USB Enabled (3W)<br>• Zigbee/BLE Enabled (0.5W) | 2.4GHz (4x4) Tx 21dBm<br>5GHz (8x8) Tx 22 dBm |
| 802.3at (Max) | 23.8W | • 5Gbps & 1Gbps Ethernet enabled<br>• USB Enabled (3W)<br>• Zigbee/BLE Disabled | 2.4GHz (4x4) Tx 21dBm<br>5GHz (4x4) Tx 22 dBm |
| 802.3af (Not recommended) | 12.4W | • 5Gbps & 1Gbps Ethernet enabled<br>• USB disabled<br>• Zigbee/BLE Disabled | 2.4GHz disabled<br>5GHz disabled |

## CERTIFICATIONS AND COMPLIANCE

| | |
|---|---|
| **Wi-Fi Alliance** | • Wi-Fi CERTIFIED™ a, b, g, n, ac<br>• Passpoint®<br>• Vantage |
| **Standards Compliance** | • 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>• EN 62311 Human Safety/RF Exposure<br>• UL 2043 Plenum<br>• WEEE & RoHS<br>• ISTA 2A Transportation |

## SOFTWARE AND SERVICES

| | |
|---|---|
| **Location Based Services** | • SPoT |
| **Network Analytics** | • SmartCell Insight (SCI) |
| **Security and Policy** | • Cloudpath |
| **IoT** | • Ruckus IoT Suite |

| ORDERING INFORMATION | |
|---|---|
| **901-R730-XX00** | R730 dual-band  (5GHz and 2.4GHz concurrent) 802.11ax wireless access point, Ultra-High Density performance, 12 spatial streams, adaptive antennas, PoE support. Includes adjustable acoustic drop ceiling bracket. Two Ethernet ports with 1GbE and 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.

| OPTIONAL ACCESSORIES | |
|---|---|
| **902-0180-XX00** | • PoE Injector 60W (90 – 264VAC, 47-63Hz) |
| **902-1170-XX00** | • AC/DC Power Supply 48V, 36W |
| **902-0120-0000** | • Secure mounting bracket for walls, junction boxes and cable ties |

PLEASE NOTE: When ordering Indoor APs, you must specify the destination region by indicating -US, or -Winstead 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.

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