R300
Indoor 802.11n 2x2:2 Wi-Fi Access Point

BENEFITS

AFFORDABLE ENTERPRISE PERFORMANCE

The R300 provides great performance with extended range at an affordable price point

KEEP EXISTING SWITCHES AND CABLES

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

MULTIPLE MANAGEMENT OPTIONS

Manage the R300 from the cloud, with on-premise physical/virtual appliances, or without a controller.

DISTICTIVE WI-FI PERFORMANCE

Extends coverage with patented BeamFlex™ adaptive antenna technology while mitigating interference by utilizing 64 directional antenna patterns.

AUTOMATE OPTIMAL THROUGHPUT

Improve performance automatically with ChannelFly and machine learning, which finds less congested Wi-Fi channels with dynamic RF channel selection.

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.

What's the difference between a small office and a crowded convention center floor? To the people in each of those spaces, a lot less than you might think. Small business users may be connecting in a less-crowded venue, but they're still using a wide range of devices and bandwidth-hungry cloud services. And they still expect to access latency-sensitive voice and video applications with consistent, reliable Wi-Fi connectivity, no matter where they roam.

The Ruckus R300 indoor access point delivers industry-leading 802.11n wireless performance and reliability for smaller venues at an affordable price. Unlike any other 802.11n wireless solution in its class, it includes patented Ruckus adaptive antenna and interference mitigation technologies found in our premier access points—in a package designed and priced for small businesses.

The R300 802.11n AP is an ideal solution for small enterprise sites, branch offices, and smaller restaurants and retail spaces. In practically any low-density indoor venue, you can get broader coverage, more reliable connections, and best-in-class 802.11n performance, without breaking the bank.

The R300 Wi-Fi 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.

Whether you're deploying ten or ten thousand APs, the R300 is also easy to manage through Ruckus' appliance, virtual and cloud management options.
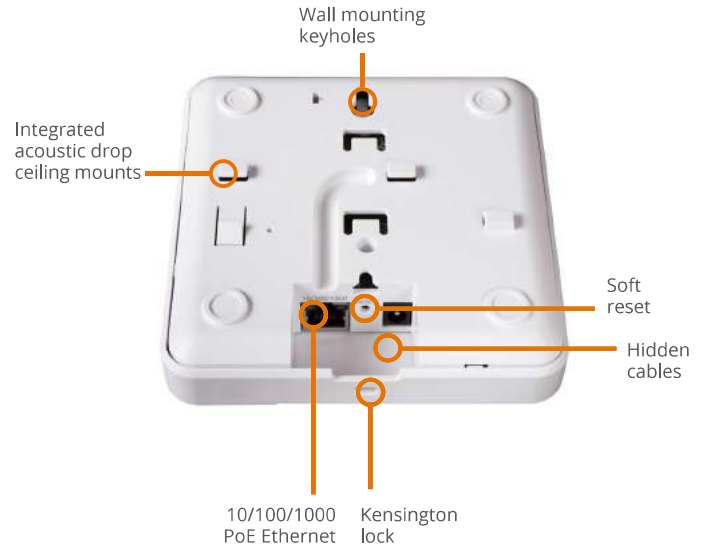
BeamFlex Adaptive Antenna Technology
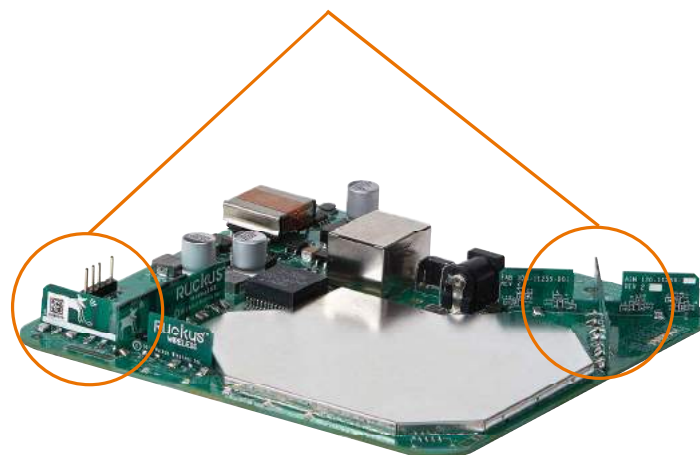
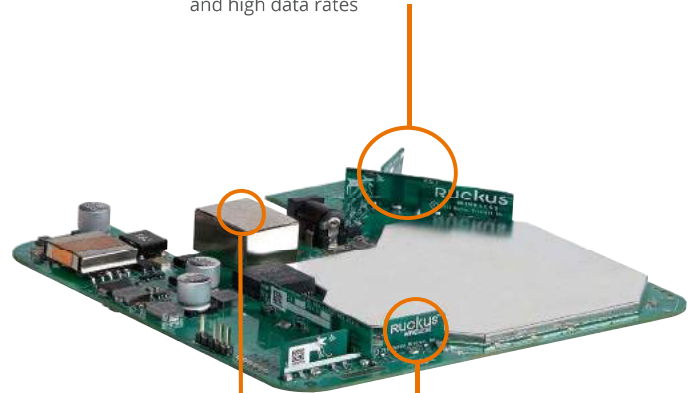## SMALL LIGHTWEIGHT FORM FACTOR WITH BUILT IN MOUNTING OPTIONS FOR EASY DEPLOYMENT

The R300 installs and mounts seamlessly making it ideal for quick and effective set up in hotspot or retail applications.

5" (13 cm)

5" (13 cm)

1" (2.8 cm)

215g (0.474 lbs.)

Wall mounting keyholes

Integrated acoustic drop ceiling mounts

Soft reset

Hidden cables

10/100/1000 PoE Ethernet

Kensington lock

PWR OPT DIR 2.4G 5G

High-gain adaptive antenna elements deliver signal gain and mitigates interference for range extension, reliability and high data rates

One 10/100/1000 Mbps Ethernet port

More than 300 potential antenna combinations can be chosen for high availability of Wi-Fi

ACCESS POINT ANTENNA PATTERN

Ruckus' BeamFlex adaptive antennas allow the R300 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

Client | Composite Pattern | BeamFlex
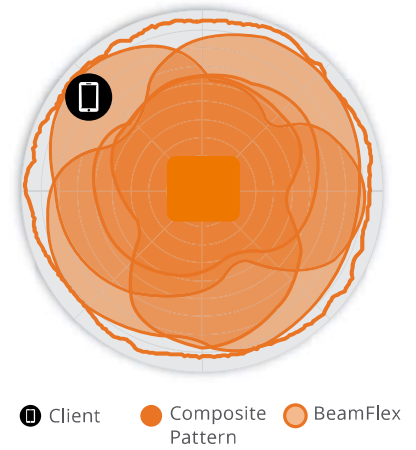
Figure 2. R300 2.4GHz Azimuth Antenna Patterns

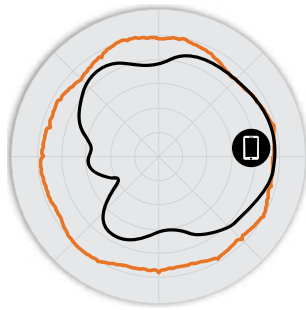**Figure 3. R300 5GHz Azimuth Antenna Patterns**

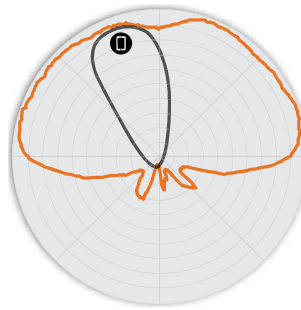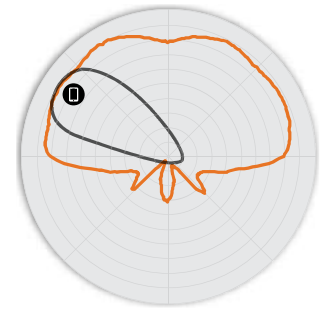**Figure 4. R300 2.4GHz Elevation Antenna Patterns**

Figure 5. R300 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 Wave 2
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, 40MHz
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

RF	
Antenna Type	• BeamFlex adaptive antennas with polarization diversity • Adaptive antenna that provides up to 64 unique antenna patterns per band
Antenna Gain (max)	• 3dBi for both 2.4GHz & 5GHz
Peak Transmit Power (aggregate across MIMO chains)	• 2.4GHz: 26dBm • 5GHz: 24dBm
Minimum Receive Sensitivity[1]	• -101dBm
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			
HT20		HT40	
MCS0	**MCS7**	**MCS0**	**MCS7**
-94	-79	-93	-73

5GHZ RECEIVE SENSITIVITY			
VHT20		VHT40	
MCS0	**MCS7**	**MCS0**	**MCS7**
-89	-69	-93	-75

2.4GHZ TX POWER TARGET	
Rate	**Pout (dBm)**
MCS0 HT20, HT40	23
MCS7 HT20, HT40	18

5GHZ TX POWER TARGET	
Rate	**Pout (dBm)**
MCS0 HT20, HT40	21
MCS0 HT20, HT40	17

PERFORMANCE AND CAPACITY	
Peak PHY Rates	• 2.4GHz: 300Mbps • 5GHz: 300Mbps
Client Capacity	• Up to 256 clients per AP
SSID	• Up to 16 per AP

RUCKUS RADIO MANAGEMENT	
Antenna Optimization	• BeamFlex
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	• SpeedFlex

NETWORKING	
Controller Platform Support	• SmartZone • ZoneDirector • Standalone
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
Gateway and Routing	• NAT/DHCP
Policy Management Tools	• Access Control Lists • Device Fingerprinting • Rate Limiting

PHYSICAL INTERFACES	
Ethernet	• 1 x 2GbE port with PoE

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

PHYSICAL CHARACTERISTICS

Physical Size	• 13(L) x 13(W) x 2.8(H) cm • 5.1(L) x 5.1(W) x 1.1(H) in
Weight	• 215g • 7.58oz
Mounting	• Wall, Drop ceiling, Desk • Secure bracket (sold separately)
Physical Security	• Hidden latching mechanism • Kensington lock • T-bar Torx
Operating Temperature	• 0°C (32°F) to 40°C (104°F)
Operating Humidity	• Up to 95%, non-condensing

POWER[2]

Power Supply	Maximum Power Consumption
802.3af	• 9.7W
DC input 12 VDC 10A	• 8.4W

CERTIFICATIONS AND COMPLIANCE

Wi-Fi Alliance[3]	• Wi-Fi CERTIFIED™ a, b, g, n, ac • Passpoint®, Vantage
Standards Compliance[4]	• 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-R300-XX02	• Concurrent dual band 802.11n AP, no power adapter

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

902-0118-0000	• Secure Mounting Bracket for ZoneFlex R300. Mounts to hard wall/ceiling, pole, and truss. Includes security screws (Torx & Phillips)
902-0173-XXYY	• Power Adapter, AC/DC wall plug,100-240Vac 50/60Hz (XX can be US, EU, AR, AU, BR, CN, IN, KR, SA, UK, UN)
902-0162-XXYY	• PoE injector (sold in quantities of 10 or 100); (XX can be US, EU, UK, AU, CH, or IN)

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.

[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.

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