

R700

Indoor 802.11ac 3x3:3 Wi-Fi Access Point



DATA SHEET



BENEFITS

STUNNING WI-FI PERFORMANCE

Provide a great user experience no matter how challenging the environment with BeamFlex+™ adaptive antenna technology and a library of 4K+ 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 R700 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.

POWER EFFICIENT

Full design feature capability for 5GHz clients with 802.3af (PoE) allows enterprises to use existing switches without costly upgrades.

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.

The busiest indoor venues demand the highest Wi-Fi capacity and performance. But they also present some of the biggest wireless challenges: Extreme client densities. Nonstop wireless noise and interference. Hundreds of users running bandwidth-hungry voice, video, and cloud applications—all hitting the WLAN infrastructure at the same time.

The Ruckus R700 is the perfect combination of performance and affordability for high-density environments, delivering the industry's best price/performance of any three-stream 802.11ac AP. In the busiest indoor venues, it uses patented Ruckus antenna technologies and RF intelligence to extend range, mitigate interference, and deliver a more reliable connection to every device. With data rates up to 450 Mbps (2.4GHz) and 1300 Mbps (5GHz), the R700 delivers blazing-fast data rates to three-stream capable clients, while improving performance for single- and dual-stream clients as well.

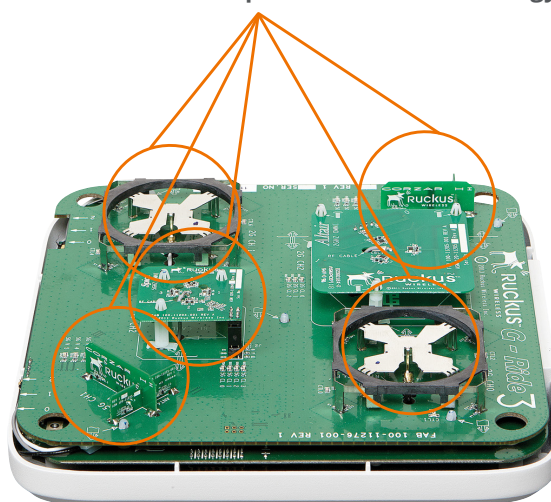
The R700 is purpose-built for challenging high-density environments such as airports, busy public venues, university campuses, hotels, and convention centers. The perfect choice for data-intensive streaming multimedia applications, the R700 delivers picture perfect HD-quality IP video while supporting voice and data applications that have stringent quality of service requirements.

The R700 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.

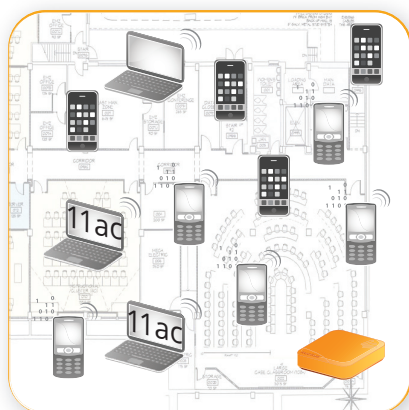
Whether you're deploying ten or ten thousand APs, the R700 is easy to manage through Ruckus' appliance, virtual and cloud management options.

BeamFlex+ Adaptive Antenna Technology

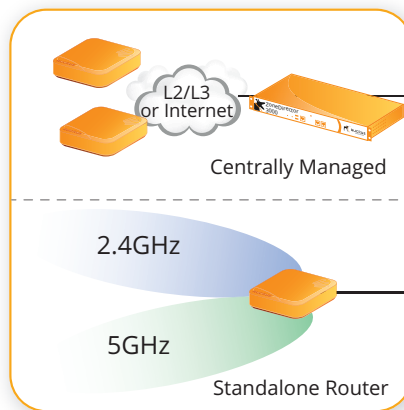




Blinding Fast 3-Stream 802.11ac



Ultra High User Density



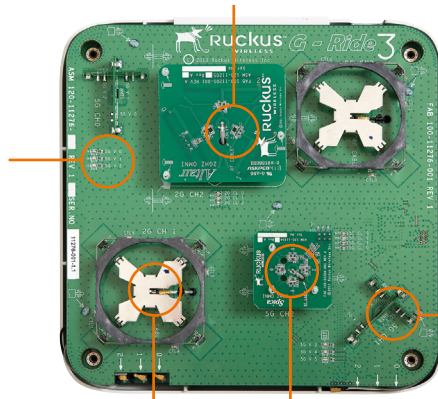
Architectural Flexibility



weight is 2.25 lbs. (1 kg.)

Additive effect of chip-based beamforming of 3 dB signal gain once client compatibility become ubiquitous in the years ahead

Dual radios 3x3:3 (1750 Mbps)



Vertical and horizontal polarity

Over 3,000 unique antenna patterns

Adaptive antenna technology and advanced RF management resulting in up to 6 dB SNR gain



Front View

Integrated key holes for wall or ceiling mount (adjustable acoustic drop ceiling bracket included)



Two 10/100/1000 Ethernet ports with 802.3af/at PoE

Hidden Cables

Kensington Lock

ACCESS POINT ANTENNA PATTERN

Ruckus' BeamFlex+ adaptive antennas allow the R700 AP to dynamically choose among a host of antenna patterns (over 3,000 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

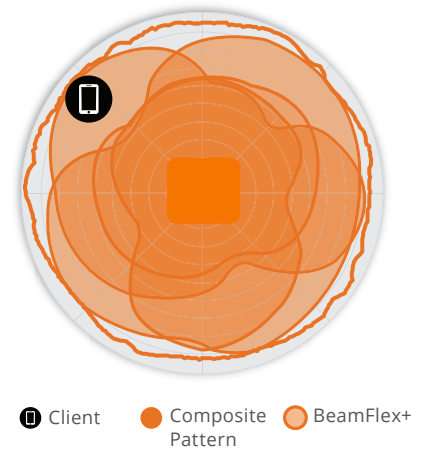


Figure 2. R700 2.4GHz Azimuth Antenna Patterns



Figure 3. R700 5GHz Azimuth Antenna Patterns

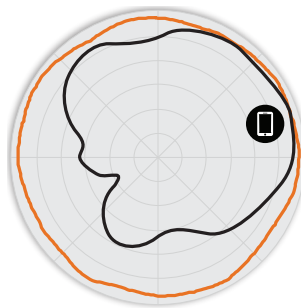


Figure 4. R700 2.4GHz Elevation Antenna Patterns

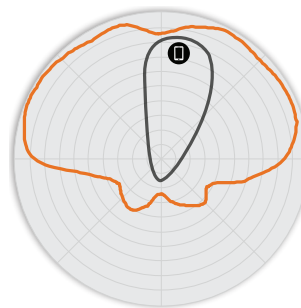
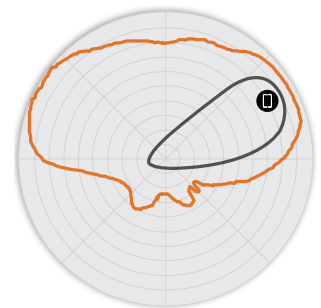


Figure 5. R700 5GHz Elevation Antenna Patterns



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	<ul style="list-style-type: none"> IEEE 802.11a/b/g/n/ac
Supported Rates	<ul style="list-style-type: none"> 802.11ac: 6.5 to 1,300Mbps (MCS0 to MCS9, NSS = 1 to 3 for VHT20/40/80) 802.11n: 6.5 Mbps to 450Mbps (MCS0 to MCS23) 802.11a/g: 54, 48, 36, 24, 18, 12, 9, 6Mbps 802.11b: 11, 5.5, 2 and 1 Mbps
Supported Channels	<ul style="list-style-type: none"> 2.4GHz: 1-13 5GHz: 36-64, 100-144, 149-165
MIMO	<ul style="list-style-type: none"> 3x3 SU-MIMO
Spatial Streams	<ul style="list-style-type: none"> 3 SU-MIMO
Channelization	<ul style="list-style-type: none"> 20, 40, 80MHz
Security	<ul style="list-style-type: none"> WPA-PSK, WPA-TKIP, WPA2 AES, 802.11i, Dynamic PSK WIPS/WIDS
Other Wi-Fi Features	<ul style="list-style-type: none"> WMM, Power Save, Tx Beamforming, LDPC, STBC, 802.11r/k/v Hotspot Hotspot 2.0 Captive Portal WISPr

RF											
Antenna Type	<ul style="list-style-type: none"> BeamFlex+ adaptive antennas with polarization diversity Adaptive antenna that provides over 3,000 unique antenna patterns per band 										
Antenna Gain (max)	<ul style="list-style-type: none"> 2.4GHz: 4dBi 5GHz: 4dBi 										
Peak Transmit Power (aggregate across MIMO chains)	<ul style="list-style-type: none"> 2.4GHz: 29dBm 5GHz: 27dBm 										
Minimum Receive Sensitivity ¹	<ul style="list-style-type: none"> -99dBm 										
Frequency Bands	<table border="0"> <tr> <td>• ISM</td> <td>2.4-2.484GHz</td> </tr> <tr> <td>• U-NII-1</td> <td>5.15-5.25GHz</td> </tr> <tr> <td>• U-NII-2A</td> <td>5.25-5.35GHz</td> </tr> <tr> <td>• U-NII-2C</td> <td>5.47-5.725GHz</td> </tr> <tr> <td>• U-NII-3</td> <td>5.725-5.85GHz</td> </tr> </table>	• 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
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PERFORMANCE AND CAPACITY	
Peak PHY Rates	<ul style="list-style-type: none"> 2.4GHz: 450Mbps 5GHz: 1300Mbps
Client Capacity	<ul style="list-style-type: none"> Up to 512 clients per AP
SSID	<ul style="list-style-type: none"> Up to 32 per AP

2.4GHZ RECEIVE SENSITIVITY			
HT20		HT40	
MCS0	MCS7	MCS0	MCS7
-93	-80	-91	-76

5GHZ RECEIVE SENSITIVITY					
VHT20		VHT40		VHT80	
MCS0	MCS7	MCS0	MCS7	MCS0	MCS7
-96	-76	-94	-76	-90	-74

2.4GHZ TX POWER TARGET	
Rate	Pout (dBm)
MCS0 HT20	22
MCS7 HT20	14

5GHZ TX POWER TARGET	
Rate	Pout (dBm)
MCS0 VHT20	22
MCS7 VHT20	17
MCS0 VHT40	22
MCS7 VHT40	18
MCS7 VHT80	22
MCS7 VHT80	18

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

NETWORKING	
Controller Platform Support	<ul style="list-style-type: none"> SmartZone ZoneDirector Cloud Wi-Fi Standalone
Mesh	<ul style="list-style-type: none"> SmartMesh™ wireless meshing technology. Self-healing Mesh
IP	<ul style="list-style-type: none"> IPv4, IPv6
VLAN	<ul style="list-style-type: none"> 802.1Q (1 per BSSID or dynamic per use based on RADIUS) VLAN Pooling Port-based
802.1x	<ul style="list-style-type: none"> Authenticator & Supplicant
Tunnel	<ul style="list-style-type: none"> L2TP, GRE, Soft-GRE
Gateway & Routing	<ul style="list-style-type: none"> NAT/DHCP²
Policy Management Tools	<ul style="list-style-type: none"> Application Recognition and Control Access Control Lists Device Fingerprinting Rate Limiting

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

² DHCP is only supported on SmartZone.

PHYSICAL INTERFACES	
Ethernet	<ul style="list-style-type: none"> 2 x 1GbE ports, RJ-45

PHYSICAL CHARACTERISTICS	
Physical Size	<ul style="list-style-type: none"> 20.3 cm / 7.99 In. (L), 20.3 cm / 7.99 In. (W), 5 cm / 1.99 In. (H)
Weight	<ul style="list-style-type: none"> 1kg (2.25lbs)
Mounting	<ul style="list-style-type: none"> Wall, Drop ceiling, Desk Secure bracket (sold separately)
Physical Security	<ul style="list-style-type: none"> Hidden latching mechanism Kensington lock T-bar Torx Bracket (902-0108-0000) Torx screw & padlock (sold separately)
Operating Temperature	<ul style="list-style-type: none"> 0°C (32°F) - 60°C (140°F)
Operating Humidity	<ul style="list-style-type: none"> Up to 95%, non-condensing

POWER ³	
Power Supply	Max Power Consumption
802.3af	<ul style="list-style-type: none"> 13W
DC	

CERTIFICATIONS AND COMPLIANCE	
Wi-Fi Alliance ⁴	<ul style="list-style-type: none"> Wi-Fi CERTIFIED™ a, b, g, n, ac Passpoint®, Vantage
Standards Compliance ⁵	<ul style="list-style-type: none"> 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

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

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

⁵ For current certification status, please see price list.

SOFTWARE AND SERVICES	
Location Based Services	<ul style="list-style-type: none"> SPoT
Network Analytics	<ul style="list-style-type: none"> SmartCell Insight (SCI)
Security and Policy	<ul style="list-style-type: none"> Cloudpath

ORDERING INFORMATION	
901-R700-XX00	R700 dual-band (5 GHz and 2.4 GHz concurrent) 802.11ac wireless access point, 3x3:3 streams, adaptive antenna array, dual ports, PoE support. Includes adjustable acoustic drop ceiling bracket. Does not include 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	
902-0162-XXYY	<ul style="list-style-type: none"> PoE injector (90 – 264 VAC 47-63 Hz)
902-1169-XX00	<ul style="list-style-type: none"> Power supply (90 – 264 VAC 47-63 Hz)
902-0100-0000	<ul style="list-style-type: none"> Accessory mounting bracket, padlock security option
902-0173-XXYY	<ul style="list-style-type: none"> Power Adapter, AC/DC wall plug, 100-240Vac 50/60Hz
902-0120-0000	<ul style="list-style-type: none"> Spare, Accessory Mounting Bracket

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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