A610

Indoor 802.11ac 2 3X3:3 Wi-Fi Access Point

ACCESS NETWORKS

BENEFITS

STUNNING WI-FI PERFORMANCE

Mitigate interference and extend coverage with patented BeamFlex+TM adaptive antenna technology utilizing 512 directional antenna patterns.

SERVE MORE DEVICES

Connect more devices simultaneously with three MU-MIMO spatial streams and concurrent dual-band 2.4/5GHz radios while enhancing non-Wave 2 device performance.

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 A610 from the cloud, with on-premises physical/virtual appliances, or without a controller.

BETTER MESH NETWORKING

Reduce expensive cabling, and complex mesh configurations by checking a box with Smart-Mesh wireless meshing technology to dynamically create self-forming, self-healing mesh networks.

EXPANDED BACKHAUL

Pair two onboard 1GbE ports with link aggregation (LACP) to maximize throughput between the AP and wired switch.

The Access Networks' A610 delivers the ideal combination of performance, affordability, and 802.11ac features for medium-density locations. It provides fast data rates (up to 1900Mbps) and Ruckus density-handling intelligence to support dozens of users with guaranteed throughput, at a cost you can afford. Dozens of users share the same crowded spectra and they all expect fast, reliable connectivity to their content and applications.
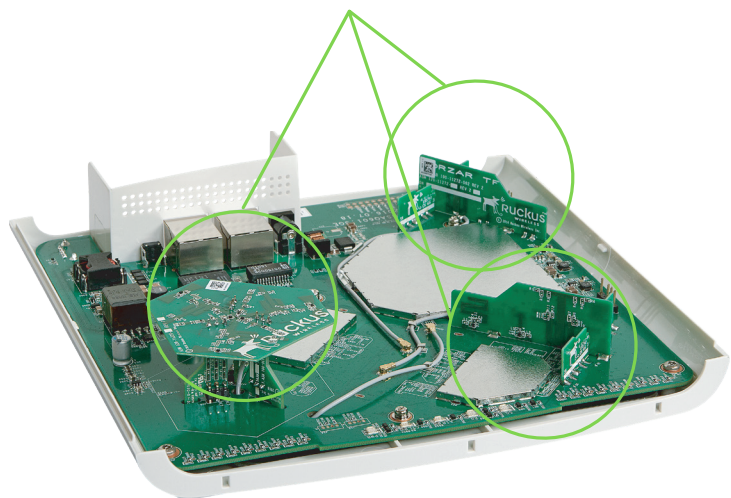
The A610 802.11ac Wi-Fi AP incorporates patented technologies found only in the Ruckus Wi-Fi portfolio.

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

With three streams of MultiUser MIMO (MU-MIMO) connectivity, the A610 can simultaneously transmit to multiple client devices, improving RF efficiency and overall throughput, for all users—even those with non-Wave 2 clients. The A610 also features a USB port for hosting IOT devices and dual Gigabit Ethernet ports that support of Link Aggregation for higher throughput to the switch.

Whether you're deploying ten or ten thousand APs, the A610 is also easy to manage through Access Networks' appliance, virtual and cloud management options.

BeamFlex Adaptive Antenna Technology

ACCESS POINT ANTENNA PATTERN

Ruckus' BeamFlex+ adaptive antennas allow the A610 AP to dynamically choose among a host of antenna patterns (up to 512 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.
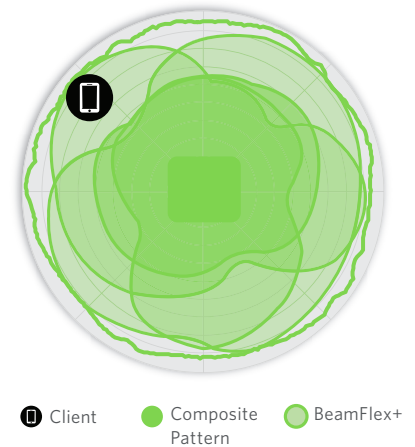
Figure 1. Example of BeamFlex+ pattern

⬛ Client 🟢 Composite Pattern 🟢 BeamFlex+

Figure 2. A610 2.4GHz Azimuth Antenna Patterns

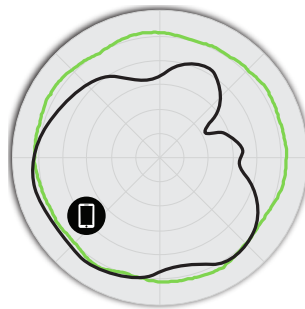**Figure 3. A610 5GHz Azimuth Antenna Patterns**

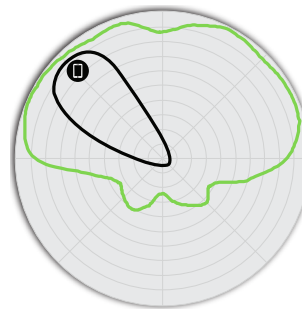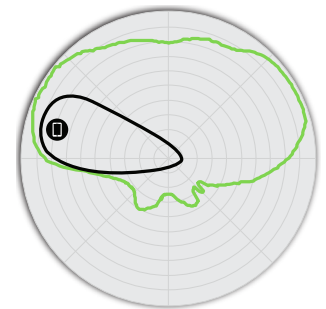**Figure 4. A610 2.4GHz Elevation Antenna Patterns**

Figure 5. A610 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 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	• 2.4GHz: 1-13 • 5GHz: 36-64, 100-144, 149-165
MIMO	• 3x3 SU-MIMO • 3x3 MU-MIMO
Spatial Streams	• 3 SU-MIMO • 3 MU-MIMO
Channelization	• 20, 40, 80, 160 MHz
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 512 unique antenna patterns by band
Antenna Gain (max)	• 2.4GHz: 1dBi • 5GHz: 3dBi
Peak Transmit Power (aggregate across MIMO chains)	• 2.4GHz: 27dBm • 5GHz: 25dBm
Minimum Receive Sensitivity[1]	• -100dBm
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	-74	-91	-71

5GHZ RECEIVE SENSITIVITY

VHT20		VHT40		VHT80	
MCS0	MCS7	MCS0	MCS7	MCS0	MCS7
-91	-71	-89	-71	-85	-68

2.4GHZ TX POWER TARGET

Rate	Pout (dBm)
MCS0 HT20	22.5
MCS7 HT20	19.5

5GHZ TX POWER TARGET

Rate	Pout (dBm)
VHT20	20
MCS0 VHT40	22
MCS7 VHT40, VHT80	19

PERFORMANCE AND CAPACITY

Peak PHY Rates	• 2.4GHz: 600Mbps • 5GHz: 1300Mbps
Client Capacity	• Up to 512 clients per AP
SSID	• Up to 16 per AP

RUCKUS RADIO MANAGEMENT

Antenna Optimization	• BeamFlex+ • Polarization Diversity with Maximal Ratio Combining (PD-MRC)
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	• Spectrum Analysis • SpeedFlex

NETWORKING

Controller Platform Support	• SmartZone • ZoneDirector • Cloud Wi-Fi • Unleashed [2] • 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) • VLAN Pooling • Port-based
802.1x	• Authenticator & Supplicant
Tunnel	• L2TP, GRE, Soft-GRE
Gateway and Routing	• NAT/DHCP
Policy Management Tools	• Application Recognition and Control • Access Control Lists • Device Fingerprinting • Rate Limiting

[1] Rx sensitivity varies by band, channel width and MCS rate.
[2] Refer to Unleashed datasheets for SKU ordering information.

PHYSICAL INTERFACES

Ethernet	• 2 x 1GbE ports, RJ-45, • Link Aggregation (LACP)
USB	• 1 USB 2.0 port, Type A connector

PHYSICAL CHARACTERISTICS

Physical Size	• 20.1(L), 19.5(W), 5.1 (H)cm • 7.9 (L), 7.68 (W), 2.00 (H)in
Weight	• 578g (1.3lb)
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) - 40°C (104°F)
Operating Humidity	• Up to 95%, non-condensing

POWER [3]

Power Supply	Mode Feature	Maximum Power Consumption
DC Input 12V DC, 2.0A		• 19.1W
802.3af	• Limits 2.4GHz to 2x3 (2-chain transmit at 21dBm aggregate power, 3-chain receive) • Turns off USB port • Turns off 1 Ethernet port	• 18.8W

CERTIFICATIONS AND COMPLIANCE

Wi-Fi Alliance [4]	• Wi-Fi CERTIFIED™ a, b, g, n, ac • Passpoint®, Vantage
Standards Compliance [5]	• 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-A610-XX00	• Concurrent dual band 802.11ac 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

902-1169-XXYY	• Power supply (90 - 264 VAC, 47 - 63 Hz)
902-0162-XXYY	• PoE injector (sold in quantities of 10 or 100)
902-0195-0000	• Spare, T-bar ceiling mount kit for A610 and other APS for mounting to flush frame ceiling
902-0120-0000	• Secure 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.

[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.

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