Ruckus R610 Unleashed
Dual-Band 802.11ac Wave 2 3X3:3 Smart Wi-Fi Access Points

DATA SHEET

BENEFITS

UNLEASH THE PERFORMANCE

In the Unleashed version, the R610 is capable of supporting controller-less deployments for up to 25 access points and 512 client devices

MU-MIMO: IMPROVES NETWORK PERFORMANCE FOR ALL CLIENTS

This cutting edge Wi-Fi technology, utilizes 802.11ac Wave 2 to communicate simultaneouslyy with mobile devices. It improves overall network efficiency & throughput for even non-Wave 2 clients

CHANNEL SELECTION OPTIMIZES THROUGHPUT

ChannelFly dynamic channel management, based on throughput measurements, not just interference, chooses the best channel to give users the highest possible throughput

WIDER CHANNELS

Capability to support 80+80MHz/160MHz channels for higher bandwidth

EXTENDED RANGE REQUIRING FEWER ACCESS POINTS

Adaptive antenna technology delivers up to 2x increase in Wi-Fi signal coverage minimizing the number of APs required to service any area

ADAPTIVE POLARIZATION DIVERSITY (PD-MRC)

Dual-polarized antennas that are dynamically selected provide better reception for hard to hear clients and more consistent performance as clients constantly change orientation

INVESTMENT PROTECTION

Flexible deployment options enable Ruckus AP's to be supported across various management platforms: Unleashed, standalone, on-premise/ virtual controller or Cloud-managed

SLEEK, LOW PROFILE ENCLOSURE FOR EASE-OF-DEPLOYMENT

Aesthetically-pleasing design and a range of mounting options

HIGH PERFORMANCE, 802.11AC WAVE 2 MID-RANGE SMART WI-FI ACCESS POINTS WITH ADAPTIVE ANTENNA TECHNOLOGY

Ruckus R610 Unleashed enables controller-less Wi-Fi architecture for small business environments with superior performance, lower costs and simplified management. Separate controllers and access point licenses are no longer needed, significantly reducing upfront costs. Set-up is also easy, thanks to a simplified web interface that helps businesses configure Wi-Fi in just 60 seconds.

The R610 Unleashed delivers high-performance and reliable 802.11ac wireless networking with MU-MIMO (Multi-User Multiple-Input Multiple-Output) capability. MU-MIMO helps boost network throughput by serving multiple clients simultaneously and also benefiting non-Wave 2 clients, thus improving overall network performance.

The R610 Unleashed, through its USB port, also enables IoT readiness for technologies like BLE, to help customers take advantage of upcoming IoT technologies.

Each R610 Unleashed integrates Ruckus-patented BeamFlex+, a software-controlled, high gain antennas that continually forms and directs each Wi-Fi packet over the best performing signal path.

Using dual-polarized antennas, the R610 Unleashed adapts in real time to anticipate hand-held device movement and rotation ensuring consistent performance.

MU-MIMO

MU-MIMO helps Wave 2 and non-Wave 2 clients. The R610 Unleashed can communicate simultaneously to multiple Wave 2 clients increasing network performance. This frees up airtime for non-Wave 2 clients resulting in enhanced aggregate network throughput.

ADVANCED WLAN APPLICATIONS

Each R610 Unleashed supports a wide range of value-added applications such as BYOD/guest onboarding, Dynamic PSK, hotspot authentication, wireless intrusion detection and many more. WLANs can be created and mapped to the same or different APs or VLANs. In a controller-less configuration, the R610 Unleashed works with a wide range of authentication servers including Microsoft's Active Directory, LDAP, and RADIUS.

FLEXIBLE DEPLOYMENT OPTIONS

Ruckus Unleashed is custom-designed to help small business owners grow their business, deliver an excellent customer experience and manage costs while supporting Wi-Fi and a variety of mobile devices with minimal IT staff.

Unleashed access points have built-in controller capabilities, including user access controls, guest networking functions, advanced Wi-Fi security and traffic management.
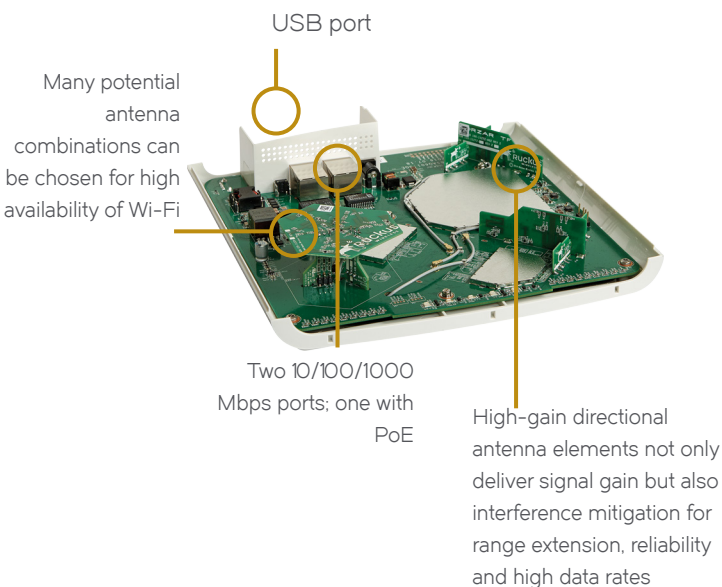
As businesses grow to multiple sites or a larger scale deployment, Ruckus offers an easy migration path to a controller-based Wi-Fi, using the same Wi-Fi access points.

COMPLETE LOCAL AND REMOTE MANAGEMENT

R610 Unleashed can be securely managed from anywhere, at anytime, using any browser on any device.

FEATURES

- 802.11ac Wave 2 Multi-User MIMO (MU-MIMO)
- Dual-band concurrent (5GHz/2.4GHz)
- BeamFlex+ (PD-MRC) smart antenna, with support for up to 1024 unique antenna patterns per access point enables up to 4dB of additional gain and up to 10dB of additional interference mitigation
- 80+80/160MHz capable
- 802.11ac standard Tx beamforming
- Automatic interference mitigation, optimized for high-density environments
- Band balancing and airtime fairness support
- Admission control/load balancing
- Standard 802.3af/at Power over Ethernet (PoE)
- Ethernet Port Link Aggregation (LACP)
- Two 10/100/1000 Ethernet ports, one with 802.3af/at Power over Ethernet (PoE)
- USB port for IoT technologies
- Router mode with NAT and DHCP services
- IP multicast video streaming support
- Advanced QoS packet classification and automatic priority for latency-sensitive traffic
- Dynamic, pre-user rate-limiting for hotspot WLANs
- WPA-PSK (AES), 802.1X support for RADIUS and Active Directory
- Ethernet 802.1X port-based authentication (authenticator and supplicant)
- Dynamic PSK
- Captive portal and guest accounts
- Application recognition and control
- Bonjour gateway
- Hotspot 2.0
- SmartMesh

USB port

Many potential antenna combinations can be chosen for high availability of Wi-Fi

Two 10/100/1000 Mbps ports; one with PoE

High-gain directional antenna elements not only deliver signal gain but also interference mitigation for range extension, reliability and high data rates

The R610 Unleashed integrates with your existing network infrastructure, delivering best-in-class 802.11ac performance and reliability at a competitive price—making it the ideal wireless solution for small business environments.
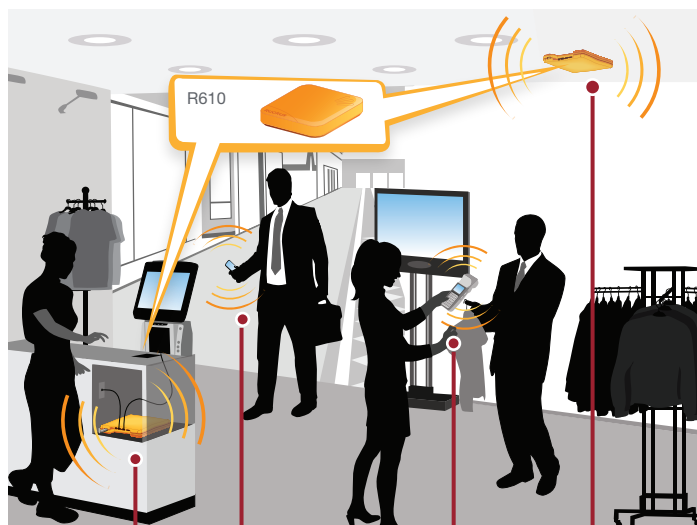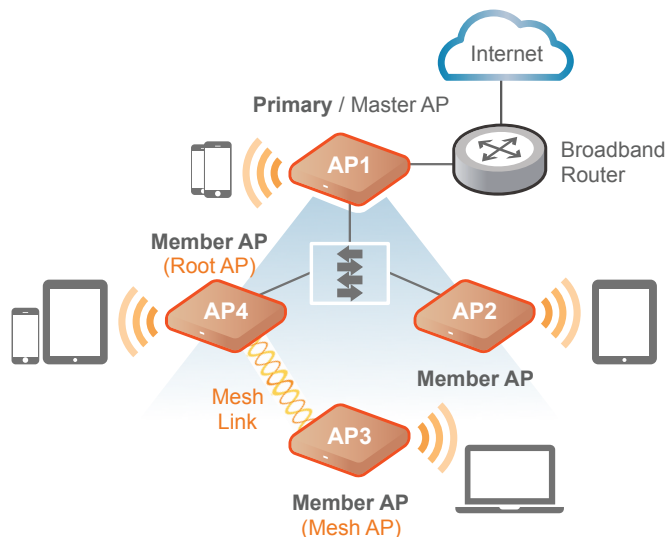
MULTI-USER MIMO (MU-MIMO)

802.11ac MU-MIMO allows the R610 Unleashed to transmit multiple spatial streams to multiple client devices simultaneously, increasing the total throughput and capacity of the wireless network. The R610 Unleashed is able to provide up to three clients each their own dedicated full-bandwidth channel using an MU-MIMO technique known as spatial reuse. This capability enables several benefits.

Efficient use of available spectrum effectively multiplies the total capacity of a network, allowing it to meet the increasing data demand driven by the proliferation of mobile Wi-Fi clients and data-hungry applications and uses such as high-definition video streaming. Additionally, MU-MIMO does not require client devices to time-share connections with other clients on the network as in legacy Wi-Fi, which means each device experiences less wait time and makes the network more responsive overall. Even legacy clients benefit from MU-MIMO on the wireless network, because substantially increased efficiency for MU clients leaves the network with more free time and capacity by supporting multiple users.

DEPLOYMENT FOR RETAIL

The R610 Unleashed is ideal for deployment in retail stores to provide inconspicuous wireless connection to high quality video, wireless IP phones and data access for handheld PoS bar code scanners.

Internet

Primary / Master AP

AP1

Broadband Router

Member AP (Root AP)

AP4

AP2

Member AP

Mesh Link

AP3

Member AP (Mesh AP)

R610

Wired ports to connect devices such as cash registers, printers, etc.

Multiple SSIDs for differentiated user services (e.g., guest Wi-Fi, point of sale, voice)

Reliable Wi-Fi connectivity & IoT capabilities using technologies such as BLE

5GHz band and smart antenna system ideal for 11ac clients

Ruckus R610 Unleashed
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PHYSICAL CHARACTERISTICS

Power	• DC Input 12V DC, 1.0A
	• Power over Ethernet 802.3af/at
	• 802.3af mode feature:
	   – Limits 2.4GHz to 2x3 (2-chain transmit at 21dBm aggregate power, 3-chain receive)
	   – Turns off USB port
	   – Turns off 1 Ethernet port

Physical Size	• 20.1cm (L), 19.5cm (W), 5.1cm (H)
Weight	• 578g (1.3 lb)
Ethernet Ports	• 2 auto MDX, auto-sensing 10/100/1000 Mbps, RJ-45, POE port (on one port) • Link Aggregation (LACP)
Mounting Options	• Electrical wallbox; Standard US and EU single gang wall jack • Optional bracket for offset & wall mount
Lock Options	• Hidden latching mechanism • Kensington Lock Hole • T-bar Torx
Environmental Conditions	• Operating Temperature: 0°C - 40°C • Operating Humidity: 10% - 95% non-condensing
Power Draw	12V DC Input • Idle: 5.7W • Typical: 10.5W • Peak: 19.1W Power over Ethernet Input • Idle: 5.7W • Typical: 10.4W • Peak: 18.8W
USB PORT	• USB 2.0 • Type A connector • Ideal for BLE dongles and sensors

PERFORMANCE AND CAPACITY

Phy Data Rates	• Up to 600 Mbps (2.4GHz) • Up to 1300 Mbps (5GHz)
Maximum APs	• 25 access points per Unleashed network
Concurrent Stations	• 512 clients per Unleashed network
Simultaneous Voip Clients	• 30 clients per AP

RF

ANTENNA	• Full omnidirectional polarization diversity
PHYSICAL ANTENNA GAIN	• Up to 3dBi
BEAMFLEX* SINR TX GAIN	• Up to 6dB
BEAMFLEX* SINR RX GAIN	• 3-5dB (PD-MRC)
INTERFERENCE MITIGATION	• Up to 15dB
MINIMUM RX SENSITIVITY	• Up to -100dBm

* BeamFlex gains are statistical system level effects translated to enhanced SINR based on observations over time in real-world conditions with multiple APs and many clients

MANAGEMENT

Deployment Options	• Ruckus Unleashed, controller-less
Configuration	• Basic SNMP support

WI-FI

Standards	• IEEE 802.11a/b/g/n/ac • 2.4GHz and 5GHz
Supported Data Rates	• 802.11n/ac: 6.5Mbps – 260Mbps (20MHz), 13.5Mbps – 600Mbps (40MHz), 29.3Mbps – 1300Mbps (80MHz), 867Mbps (160MHz[1]) • 802.11a: 54, 48, 36, 24, 18, 12, 9 and 6Mbps • 802.11b: 11, 5.5, 2 and 1 Mbps • 802.11g: 54, 48, 36, 24, 18, 12, 9 and 6 Mbps
Radio Chains	• 3 x 3
Spatial Streams	• 3 streams
Channelization	• 20MHz, 40MHz, 80MHz, 160MHz capable
RF POWER OUPUT (Aggregate)	• 28dBm for 2.4GHz[†] • 27dBm for 5GHz[†]
Operating Channels	• US/Canada: 1-11, Europe (ETSI X30): 1-13, Japan X41: 1-13 • 5 GHz channels: Country dependent
Frequency Band	• IEEE 802.11 b/g/n: 2.4 – 2.484GHz • IEEE 802.11a/ac: 5.15 – 5.25GHz; 5.25 – 5.35GHz; 5.47 –5.725GHz; 5.725 – 5.85GHz
Power Save	• Supported
Wireless Security	• WPA-PSK, WPA-TKIP, WPA2 AES, 802.11i • Authentication via 802.1X with local authentication database, support of RADIUS, and ActiveDirectory
Certifications**	• US, Europe, Argentina, Australia, Brazil, Canada, Chile, China, Colombia, Costa Rica, Egypt, Hong Kong, India, Indonesia, Israel, Japan, Korea, Malaysia, Mauritius, Mexico, New Zealand, Pakistan, Peru, Philippines, Russia, Saudi Arabia, Singapore, South Africa, Taiwan, Thailand & UAE. • Wi-Fi Alliance • WEEE/RoHS compliance • EN-60601-1-2 (Medical) • EN50121-1 Railway EMC • EN50121-4 Railway Immunity • IEC 61373 Railway Shock & Vibration • UL 2043 plenum rated • 5GHz UNII-1 (2014)

[†] Maximum power varies by country
** For current certification status please see price list
[1] With 160MHz channelization enabled, the R610 Unleashed runs in single stream mode (1x1:1)

PRODUCT ORDERING INFORMATION

MODEL	DESCRIPTION
Ruckus R610 Unleashed Smart Wi-Fi Wave 2 802.11ac Access Point	
9U1-R610-xx00	R610 Unleashed dual-band 802.11abgn/ac (802.11ac Wave 2) Wireless Access Point, 3x3:3 streams, MU-MIMO, BeamFlex+, dual ports, 802.3af/at PoE support. Does not include power adapter or PoE injector.
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)
902-0120-0000	• Secure Mounting Bracket

PLEASE NOTE: When ordering Indoor APs, you must specify the destination region by indicating -US, -WW, -JP or -Z2 instead of XX.

For access points, –Z2 applies to the following countries: Algeria, Egypt, Israel, Morocco, Tunisia, and Vietnam.

Warranty: Sold with a limited lifetime warranty.
For details see: http://support.ruckuswireless.com/warranty

NOTE: SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

Ruckus
Simply Better Wireless.