MODEL

T610

OUTDOOR 802.11AC WAVE 2 4X4:4 WI-FI ACCESS POINT

Ruckus®
Simply Better Wireless.

In busy outdoor public venues, users and operators need fast, reliable connectivity. Whether it's smartphones running bandwidth-hungry voice and video applications, Internet of Things (IoT) sensors, or "Smart City" connected devices, crowded outdoor spaces demand high-performance Wi-Fi.

The Ruckus T610 delivers blazing-fast connectivity for medium-density outdoor deployments, with data rates up to 2.5Gbps—the highest available data rates for Wi-Fi clients. Patented Ruckus adaptive antenna technology improves signal quality for every connected device, everywhere. And the AP delivers all of this in an industrial-grade enclosure that can stand up to the rigors of the elements in practically any outdoor space.
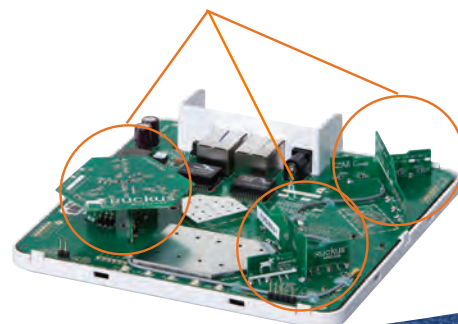
The T610 is purpose-built for busy public venues such as outdoor campuses and hotspots, arenas, convention centers, and transportation hubs. It provides industrial-grade features such as secure image download and an IP67-compliant USB port, making it easy to deploy IoT applications for Smart Cities or large-scale video surveillance/monitoring systems. It's the perfect choice for medium-density deployments with standard Ethernet backhaul that require premium wireless performance.

The T610 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.

Additionally, the T610 provides a full complement of next-generation 802.11ac features. 802.11ac Multi-User MIMO (MU-MIMO) support allows the AP to simultaneously transmit to multiple client devices, drastically improving airtime efficiency and overall throughput for all clients—even non-Wave 2 devices. SmartMesh™ wireless meshing technology accelerates time-to-deployment and eliminates the cost associated with running Ethernet cabling between multiple access points in the network.

Whether you're deploying ten or ten thousand APs, the T610 is also easy to manage through Ruckus' appliance, virtual and cloud management options.

BENEFITS

GREAT OUTDOOR WI-FI

Experience high performance outdoor Wave 2 Wi-Fi with IP-67 weather proofing and 2 gigabit Ethernet ports.

STUNNING WI-FI PERFORMANCE

Extends coverage with patented BeamFlex+™ adaptive antenna technology while mitigating interference by utilizing over 4,000 directional antenna patterns.

MULTIPLE MANAGEMENT OPTIONS

Manage the T610 from the cloud, or with on-premises physical/virtual appliances.

GET 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

SERVE MORE DEVICES

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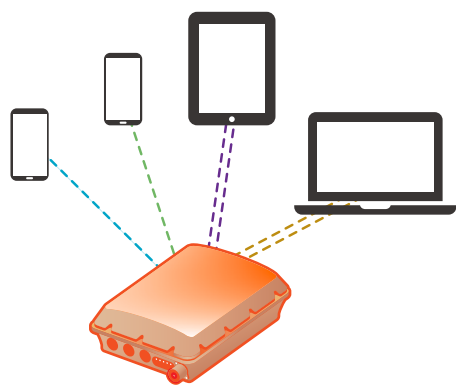
EXPANDED BACKHAUL

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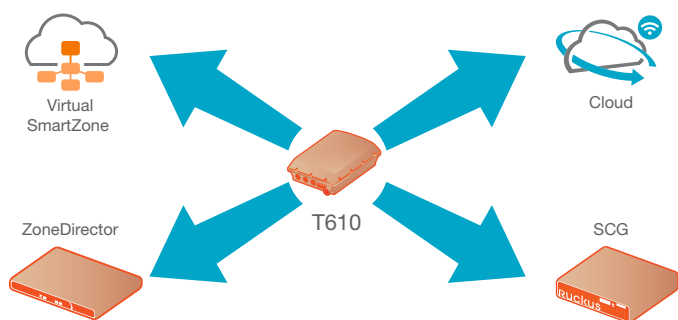
EXPANDABLE CAPABILITIES

Augment AP capabilities through the onboard USB 2.0 port to support additional technologies

MORE THAN WI-FI

Enhance your network with Cloudpath security and management software, SPoT real-time Wi-Fi location engine and analytics software, and SCI network analytics

BeamFlex Adaptive Antenna Technology

Blinding fast Wave 2 4x4:4 802.11ac with MU-MIMO

Flexible Deployment Options

Rapid deployment: Smart Mesh

FEATURES

WIRELESS

- 802.11ac Multi-User MIMO (MU-MIMO)
- Concurrent dual-band (5 GHz/2.4 GHz) support
- 2533 Mbps maximum PHY rate (1733 Mbps in 5GHz; 800 Mbps in 2.4GHz)
- BeamFlex+ (PD-MRC) adaptive antenna technology, with support for 4000+ unique antenna patterns enables up to 4dB of additional gain and up to 10 dB of additional interference mitigation
- Unmatched Rx sensitivity down to -104dBm
- 802.11ac standard Tx Beamforming
- Space Time Block Coding for optimized client performance
- Improved Maximum Ratio Combining (MRC) for best-in-class receive sensitivity
- Low Density Parity Check (LDPC) for increased data throughput at all ranges
- 256-QAM support on 5GHz and 2.4GHz

POWER

- 802.3af/at mode of operation

POWER SOURCE	2.4GHZ	5GHZ	2ND ETH	USB
802.3af PoE	2x4 18dBm/chain	4x4 20dBm/chain	--	--
802.3at PoE+	4x4 22dBm/chain	4x4 20dBm/chain	Yes	Yes

INTERFACES

- One 1 x 1GbE port for backhaul
- Second 1GbE port, for Link Aggregation
- Support for IoT applications and enhanced location-based services via an IP67 compliant USB interface

OUTDOOR CHARACTERISTICS AND MOUNTING

- IP67 rated, -40 °C to +65 °C
- Mounting options for fast and easy deployment: wall or pole mountable

ENTERPRISE FEATURES

- Smart Positioning Technology (Real-time location engine and analytics software)
- Cloudpath (Security and management software)
- SmartCell Insight (Network analytics engine)
- Enhanced hardware-based platform security enabling secure image download
- Multicast IP video streaming support
- WPA-PSK (AES), 802.1X support for RADIUS and AD*
- Zero-IT and Dynamic PSK*
- Admission control/load balancing*
- Band balancing
- Captive portal and guest accounts*
- Support for SmartMesh wireless meshing technolgy to eliminate cost and time associated with cumbersome Ethernet drops

* when used with management.

PATENTED BEAMFLEX+ ADAPTIVE ANTENNA TECHNOLOGY EXTENDS SIGNAL RANGE, IMPROVES RELIABILITY OF CLIENT CONNECTIONS

The Ruckus T610 integrates patented software-controlled adaptive antennas that delivers additional signal gain per radio chain. As BeamFlex+ adaptive antenna technology adapts to client locations and antenna polarity, the smart antenna technology optimizes the RF energy toward client on a per packet basis. This allows for substantial performance improvement and a reduction in packet loss from the ability to automatically mitigate interference and obstacles. BeamFlex+ adaptive antenna technology with PD-MRC or polarization diversity ensures the T610 listens in all polarizations simultaneously. This results in significant receive signal gain from mobile devices with weak transmitters.

MULTI-USER MIMO (MU-MIMO)

802.11ac MU-MIMO allows the T610 to transmit multiple spatial streams to multiple client devices simultaneously, increasing the total throughput and capacity of the wireless network. The T610 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.

ADVANCED WLAN APPLICATIONS

When used with the Ruckus Smart WLAN management systems, the T610 supports a wide range of value-added applications such as guest networking, Dynamic PSK, hotspot authentication, wireless intrusion prevention and many more. WLANs can also be grouped and shared by specific APs. In a centrally managed configuration, the T610 works with various authentication servers including AD, LDAP, and RADIUS.

PHYSICAL CHARACTERISTICS

Power	• PoE: 802.3at, af *
Physical Size	• 31.7 cm (L), 24.1 cm (W), 9.5 cm (H)
Weight	• 6 lbs (without mounting hardware)
Interfaces	• 1 Ethernet port, auto MDX, auto-sensing, 10/100/1000 Mbps, RJ-45, 802.3at PoE input, 802.3af PoE input (reduced operation) • 1 Ethernet port, auto MDX, auto-sensing, 10/100/1000 Mbps, RJ-45, support for link aggregation of the two Ethernet ports • 1 field accessible IP67 USB port
Powering Options	• Power over Ethernet+ (802.3at) with Category 5/5e/6 cable. With standard PoE (802.3af), the USB and 2nd Ethernet ports are disabled and the transmit power on 2.4G/5G bands is reduced
Environmental Conditions	• Operating Temperature: • -40°F (-40°C) to 149°F (65°C) • Operating Humidity: up to 95% non-condensing
Power Consumption	• 5.5W (minimum) • 10.4W (typical) • 25W peak

* reduced operation: 2x2, 1 Ethernet port powers off, USB powers off

RF

Adaptive antenna	• 4,000+ unique antenna patterns, polarization diversity
Maximum Transmit Power	• 28 dBm on 2.4 GHz; 28 dBm on 5 GHz
Physical antenna gain	• 3 dBi
BeamFlex SINR Tx gain	• up to 6 dB
BeamFlex SINR Rx gain	• up to 3-5 dB
Interference mitgation	• up to 15 dB
Minimum Rx sensitivity	• -104 dBm

PERFORMANCE AND CAPACITY

Phy Data Rates	• Up to 800 Mbps (2.4GHz) • Up to 1733 Mbps (5GHz)
Concurrent Stations	• Up to 512
Voice Calls	• up to 30

NETWORK ARCHITECTURE

IP	• IPv4, IPv6, dual-stack
VLANs	• 802.1Q (1 per BSSID or dynamic, per user based on RADIUS) • Port-based
802.1X for wired ports	• Authenticator • Supplicant
Tunneling	• L2TP

MANAGEMENT

DEPLOYMENT OP-TIONS	• Standalone (individually managed) • Centrally managed • Cloud mananged

Warranty: THIS PRODUCT HAS A ONE YEAR WARRANTY.
For details see: http://support.ruckuswireless.com/warranty

Wi-Fi

Standards	• IEEE 802.11a/b/g/n/ac
Supported data rates	• 802.11ac: 29.3 Mbps – 1733 Mbps (80MHz) • 802.11n: 6.5 Mbps – 216.7 Mbps (20MHz) 13.5 Mbps – 800 Mbps (40MHz) • 802.11a: 54, 48, 36, 24, 18, 12, 9 and 6 Mbps • 802.11b: 11, 5.5, 2 and 1 Mbps • 802.11g: 54, 48, 36, 24, 18, 12, 9 and 6 Mbps
Radio Chains/ Streams	• 4x4:4
MIMO	• SU-MIMO — Up to 4 streams • MU-MIMO — Up to 3 streams
Channelization	• 20 MHz, 40 MHz, and/or 80 MHz
Frequency Band	• IEEE 802.11ac: 5.15 – 5.85 GHz • IEEE 802.11a/n: 5.15 – 5.85 GHz • IEEE 802.11b: 2.4 – 2.484 GHz
BSSIDs	• Up to 16 (2.4 GHz) • Up to 16 (5 GHz)
Power Save	• Supported
Compliance	• WEEE/RoHS compliance • EN 60601-1-2 Medical • Wi-Fi Alliance
Subway And Railroad Certifications	• EN50121-1 EMC • EN50121-4 Immunity • IEC 61373 Shock & Vibration

PRODUCT ORDERING INFORMATION

MODEL	DESCRIPTION
T610 Dual band 802.11ac Wave 2 Access Point	
901-T610-XX01	T610 802.11ac Outdoor Wireless Access Point, 4x4:4 Stream, Omnidirectional Beamflex+ coverage, 2.4GHz and 5GHz concurrent dual band, Dual 10/100/1000 Ethernet ports, POE in, IP-67 Outdoor enclosure, -40 to 65C Operating Temperature. Includes standard 1-year warranty. Mounting kit sold as separate accessory (902-0125-0000). For box contents, see Shipping Container Contents.
901-T610-XX51	T610s 802.11ac Outdoor Wireless Access Point, 4x4:4 Stream, 120 degree sector Beamflex+ coverage, 2.4GHz and 5GHz concurrent dual band, Dual 10/100/1000 Ethernet ports, POE in, IP-67 Outdoor enclosure, -40 to 65C Operating Temperature. Includes standard 1-year warranty. Mounting kit sold as separate accessory (902-0125-0000). For box contents, see Shipping Container Contents.
Optional Accessories	
902-0125-0000	Secure articulating mounting bracket
902-0127-0000	Extended cap to accommodate up to 6 cm long USB dongle
902-0180-XX00	Spares of Power over Ethernet (PoE) Injector (10/100/1000 Mbps) quantity of 1 unit (7762-series, 7782-series, 8800-S, T610 and T610 access points)
902-0183-0000	Spare Data Connector for T300-series, 7782-series, 8800, T610 and T610; contains 1 weatherizing data cable gland

PLEASE NOTE: When ordering Outdoor 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, -IN, -JP, -SA, -UK, or -UN instead of XX.

For access points, -Z2 applies to the following contries: Algeria, Egypt, Israel, Morocco, Tunisia, and Vietnam

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