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.
ACCESS POINT ANTENNA PATTERN

Ruckus' BeamFlex+ adaptive antennas allow the T610 AP to dynamically choose among a host of antenna patterns (over 4,000 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.

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 Standards

- IEEE 802.11a/b/g/n/ac Wave 2

### Supported Rates

- **802.11ac**: 6.5 to 1,733Mbps (MCS0 to MCS9, NSS = 1 to 4 for VHT20/40/80)
- **802.11n**: 6.5Mbps to 600Mbps (MCS0 to MCS 31)
- **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

- 4x4 SU-MIMO
- 4x4 MU-MIMO

### Spatial Streams

- 4 SU-MIMO
- 3 MU-MIMO

### Radio Chains and Streams

- 4x4

### Channelization

- 20, 40, 80MHz

### 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 4,000+ unique antenna patterns

#### Antenna Gain (max)

- Omni - Up to 3dBi
- Sector - Up to 8dBi

#### Peak Transmit Power (aggregate across MIMO chains)

- 28dBm for both 2.4GHz & 5GHz

#### BeamFlex+ SINR Transmit Power Gain*

- Up to 6 dB

#### BeamFlex+ SINR Receive Power Gain*

- Up to 4 dB

#### Minimum Receive Sensitivity

- -104dBm

#### 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 TX POWER TARGET

<table>
<thead>
<tr>
<th>Rate</th>
<th>Pout (dBm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCS0 HT20</td>
<td>20</td>
</tr>
<tr>
<td>MCS7 HT20</td>
<td>17</td>
</tr>
<tr>
<td>MCS0 HT40</td>
<td>22</td>
</tr>
<tr>
<td>MCS7 HT40</td>
<td>19</td>
</tr>
</tbody>
</table>

### 5GHz TX POWER TARGET

<table>
<thead>
<tr>
<th>Rate</th>
<th>Pout (dBm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC50 VHT20</td>
<td>22</td>
</tr>
<tr>
<td>MC57 VHT20</td>
<td>19</td>
</tr>
<tr>
<td>MC50 VHT40, VHT80</td>
<td>22</td>
</tr>
<tr>
<td>MC57 VHT40, VHT80</td>
<td>19</td>
</tr>
</tbody>
</table>

### PERFORMANCE AND CAPACITY

#### Peak PHY Rates

- 2.4GHz: 600Mbps
- 5GHz: 1733Mbps

#### Client Capacity

- Up to 512 clients per AP

#### SSID

- Up to 31 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

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**Footnotes:**

* 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.

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

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## NETWORKING

| Controller Platform Support | • SmartZone  
| • ZoneDirector  
| • Unleashed<sup>2</sup>  
| • Cloud Wi-Fi  
| • 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 and Suppliant  
| Tunnel | • L2TP, GRE, Soft-GRE  
| Policy Management Tools | • Application Recognition and Control  
| • Access Control Lists  
| • Device Fingerprinting  
| • Rate Limiting  
| IoT Capable | • Yes  

## PHYSICAL INTERFACES

| Ethernet | • 2 x 1GbE ports, RJ-45  
| • LACP  
| USB | • 1 USB 2.0 port, Type A connector  

## PHYSICAL CHARACTERISTICS

| Physical Size | • 31.7(L) x 24.1(W) x 9.5(H) cm  
| • 12.8(L) x 9.5(W) x 3.7(H) in  
| Weight | • 2.7kg (6lbs) without mounting hardware  
| Ingress Protection | • IP-67  
| Mounting | • Wall  
| • Pole Mount  
| Physical Security | • Hidden latching mechanism  
| • Kensington lock  
| • T-bar Torx  
| Operating Temperature | • -40°C (-40°F) to 65°C (149°F)  
| Operating Humidity | • Up to 95%, non-condensing  
| Wind Survivability | • Up to 266 km/h (165mph)  

## POWER<sup>3</sup>

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>Feature Limitation</th>
<th>Max Power Consumption</th>
</tr>
</thead>
</table>
| 802.3af | • 2.4GHz radio: 2x2, 18dBm per chain  
| • 5GHz radio: 4x4, 20dBm per chain  
| • 2nd Ethernet port & USB disabled  
| 802.3at | • 2.4GHz radio: 4x4, 22dBm per chain  
| • 5GHz radio: 4x4, 20dBm per chain  
| • 2nd Ethernet port & USB enabled  |

## CERTIFICATIONS AND COMPLIANCE

### Wi-Fi Alliance<sup>4</sup>
- Wi-Fi CERTIFIED™ a, b, g, n, ac  
- Passpoint®  
- Vantage

### Standards Compliance<sup>5</sup>
- 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-T610-XX00 | • 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°C to 65°C 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-XX11 | • 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°C to 65°C Operating Temperature. Includes standard 1-year warranty. Mounting kit sold as separate accessory (902-0125-0000). For box contents, see Shipping Container Contents.  

See Ruckus price list for country-specific ordering information.  
Warranty: Sold with a limited 1-year warranty.  
For details see: [http://support.ruckuswireless.com/warranty](http://support.ruckuswireless.com/warranty).

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<sup>2</sup> Refer to Unleashed datasheets for SKU ordering information.  
<sup>3</sup> Max power varies by country setting, band, and MCS rate.  
<sup>4</sup> For complete list of WFA certifications, please see Wi-Fi Alliance website.  
<sup>5</sup> For current certification status, please see price list.
T610
Outdoor 802.11ac Wave 2 4x4:4 Wi-Fi Access Point

<table>
<thead>
<tr>
<th>OPTIONAL ACCESSORIES</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>902-0125-0000</td>
<td>Secure articulating mounting bracket</td>
</tr>
<tr>
<td>902-0127-0000</td>
<td>Extended cap to accommodate up to 6 cm long USB dongle</td>
</tr>
<tr>
<td>902-0183-0000</td>
<td>Spare Weatherizing Cable Gland with 1 hole</td>
</tr>
<tr>
<td>902-0162-XXYY</td>
<td>PoE injector (24W) (Sold in quantities of 1, 10 or 100)</td>
</tr>
</tbody>
</table>

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, -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.