

T300

Outdoor 802.11ac 2x2:2 Wi-Fi Access Point



DATA SHEET



BENEFITS

GOOD OUTDOOR WI-FI

Industrial-grade IP-67 hardened enclosures (-20°C to +65°C).

GREAT WI-FI PERFORMANCE

Provide a great user experience no matter how challenging the environment with BeamFlex+™ adaptive antenna technology using up to 64-directional antenna patterns.

AUTOMATE OPTIMAL THROUGHPUT

Improve performance automatically with ChannelFly™ and machine learning, which finds less congested Wi-Fi channels with dynamic RF channel selection.

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.

Modern users expect reliable connectivity on their mobile devices—anywhere, anytime. But in crowded outdoor venues with thousands of users and constant RF noise and interference, they are often frustrated by poor coverage, dropped connections, and reduced data rates. These bad Wi-Fi experiences can easily translate to negative perceptions of the venue overall.

The Ruckus T300 Series of dual-band 802.11ac outdoor access points provide consistent, reliable Wi-Fi connectivity in crowded public venues, at an affordable price. Available with either internal omni-directional antennas or optional external 5GHz antenna support, the T300 Series uses patented Ruckus antenna optimizations and interference mitigation technologies to extend range, improve throughput, and deliver industry-leading 802.11ac performance to every connected client. At the same time, the T300 Series is designed for fast, simple installation with an ultra-lightweight, low-profile, IP 67-rated enclosure that can stand up to the rigors of outdoor deployments.

The Ruckus T300 Series is perfect for high-density public venues such as airports, conventions centers, plazas and malls, and other dense urban environments. By providing a superior Wi-Fi experience to every user in high-capacity outdoor spaces, venue operators can improve guest satisfaction and loyalty, deliver new kinds of wireless location-based services, and increase revenues.

The Ruckus T300 Series 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 T300 Series is also easy to manage through Ruckus' appliance, virtual, and cloud management options.

BeamFlex+ Adaptive Antenna



RUCKUS T300: DUAL-BAND 802.11AC 2X2:2, 1167 MBPS

Internal omni directional antenna for 2.4GHz and 5GHz

- Well suited to high-density deployments
- Best for omni coverage and high capacity



RUCKUS T300E: DUAL-BAND 802.11AC 2X2:2, 1167 MBPS

Internal omni directional antenna for 2.4GHz and 5GHz, support for optional external 5GHz antennas

- Well suited to high-density deployments
- Best for "greenfield" applications requiring 2.4GHz access and long range 5GHz SmartMesh wireless meshing technology**



Optional external 5GHz antennas (T300e only)



Protective vent to equalize pressure

Integrated dual-band BeamFlex+ adaptive antennas with PD-MRC



802.3af Power over Ethernet (PoE) Input

ACCESS POINT ANTENNA PATTERN

Ruckus' BeamFlex+ adaptive antennas allow the T300 AP to dynamically choose among a host of antenna patterns (up to 64 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

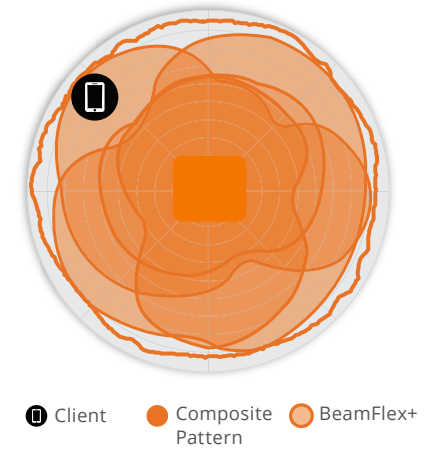


Figure 2. T300 2.4GHz Azimuth Antenna Patterns



Figure 3. T300 5GHz Azimuth Antenna Patterns



Figure 4. T300 2.4GHz Elevation Antenna Patterns

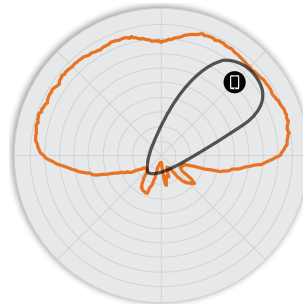
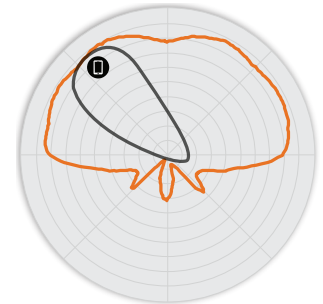


Figure 5. T300 5GHz Elevation Antenna Patterns



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 867Mbps (MCS0 to MCS9, NSS=1 to 2 for VHT20/40/80) 802.11n: 6.5Mbps to 300Mbps (MCS0 to MCS15) 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"> 2x2 SU-MIMO
Spatial Streams	<ul style="list-style-type: none"> 2 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 64 unique antenna patterns per chain
Antenna Gain (max)	<ul style="list-style-type: none"> 2.4GHz: 2dBi 5GHz: 3dBi
Peak Transmit Power (aggregate across MIMO chains)	<ul style="list-style-type: none"> 2.4GHz: 26dBm 5GHz: 25dBm
BeamFlex+ SINR Transmit Power Gain*	<ul style="list-style-type: none"> Up to 6 dB
BeamFlex+ SINR Receive Power Gain*	<ul style="list-style-type: none"> Up to 4 dB
Minimum Receive Sensitivity ¹	<ul style="list-style-type: none"> -100dBm for 2.4GHz -94dBm for 5GHz
Frequency Bands	<ul style="list-style-type: none"> 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
-92	-76	-89	-73

5GHZ RECEIVE SENSITIVITY					
VHT20		VHT40		VHT80	
MCS0	MCS7	MCS0	MCS7	MCS0	MCS7
-95	-76	-92	-74	-90	-69

* 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.

² Refer to Unleashed datasheets for SKU ordering information.

2.4GHZ TX POWER TARGET	
Rate	Pout (dBm)
MCS0 HT20	23
MCS7 HT20	17
MCS0 HT40	23
MCS7 HT40	15

5GHZ TX POWER TARGET	
Rate	Pout (dBm)
MCS0 VHT20	22
MCS7 VHT20	16
MCS0 VHT40, VHT80	22
MCS7 VHT40, VHT80	18

PERFORMANCE AND CAPACITY	
Peak PHY Rates	<ul style="list-style-type: none"> 2.4GHz: 300Mbps 5GHz: 867Mbps
Client Capacity	<ul style="list-style-type: none"> Up to 512 clients per AP
SSID	<ul style="list-style-type: none"> Up to 43 per AP

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 Unleashed² 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
Policy Management Tools	<ul style="list-style-type: none"> Application Recognition and Control Access Control Lists Device Fingerprinting Rate Limiting

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

PHYSICAL CHARACTERISTICS	
Physical Size	<ul style="list-style-type: none"> 23.9(L) x 19.5(W) x 11.0(H) cm 9.4(L) x 7.5(W) x 4.3(H) in
Weight	<ul style="list-style-type: none"> 2.1 lbs (1 kg) with bracket 2 lbs (0.9 kg) without bracket
Ingress Protection	<ul style="list-style-type: none"> IP-67
Mounting	<ul style="list-style-type: none"> Wall Pole Mount 1" to 2.5" diameter
Physical Security	<ul style="list-style-type: none"> Hidden latching mechanism Kensington lock T-bar Torx
Operating Temperature	<ul style="list-style-type: none"> -20°C (-4°F) to 65°C (149°F)
Operating Humidity	<ul style="list-style-type: none"> Up to 95%, non-condensing

POWER ²	
Power Supply	Maximum Power Consumption
802.3af PoE Input (Class 3PD)	<ul style="list-style-type: none"> 11W

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

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-T300-XX01* (XX = US, WW)	<ul style="list-style-type: none"> T300, omni, outdoor access point, 802.11ac 2x2:2 internal BeamFlex+ adaptive antenna technology, dual band concurrent, one Ethernet port, PoE input, includes mounting bracket and one year warranty. Does not include PoE injector.
901-T300-XX-81** (XX = US, WW)	<ul style="list-style-type: none"> T300e, outdoor access point, 802.11ac 2x2:2 internal BeamFlex+ adaptive antenna technology 2GHz & 5GHz, external 5GHz N-female, dual band concurrent, one ethernet port, PoE input, includes mounting bracket and one year warranty. Does not include PoE injector or external 5GHz antenna.

See Ruckus Price List for country-specific ordering information.
 *Requires ZoneDirector 9.8.1, SCG 2.5.1 or vSCG 3.0 or greater
 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"> Spare, PoE Adapter, 10/100/1000BaseT, with power adapter
902-0182-0003	<ul style="list-style-type: none"> Spare, Outdoor Mounting Bracket, AnyAngle
911-2101-DP01	<ul style="list-style-type: none"> 5 GHz dual polarized high gain 21dBi directional antenna
911-2401-DP01	<ul style="list-style-type: none"> 5 GHz dual polarized high gain 24dBi directional antenna
902-0125-0000	<ul style="list-style-type: none"> Spare Mounting Kit
902-0183-0000	<ul style="list-style-type: none"> Spare cable gland for weatherizing the RJ-45 ports for outdoor APs

PLEASE NOTE: When ordering outdoor APs, you must specify the destination region by indicating -US, -WW, or -ZZ 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, -ZZ 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.

Copyright © 2018 Ruckus Networks, an ARRIS company. All rights reserved. No part of this content may be reproduced in any form or by any means or used to make any derivative work (such as translation, transformation, or adaptation) without written permission from Ruckus Networks ("Ruckus"). Ruckus reserves the right to revise or change this content from time to time without obligation on the part of Ruckus to provide notification of such revision or change.

The Ruckus, Ruckus Wireless, Ruckus logo, Big Dog design, BeamFlex, ChannelFly, Edgelron, FastIron, HyperEdge, ICX, IronPoint, OPENG, and Xclaim and trademarks are registered in the U.S. and other countries. Ruckus Networks, Dynamic PSK, MediaFlex, Simply Better Wireless, SmartCast, SmartCell, SmartMesh, SpeedFlex, Unleashed, and ZoneDirector are Ruckus trademarks worldwide. Other names and brands mentioned in these materials may be claimed as the property of others.

Ruckus provides this content without warranty of any kind, implied or expressed, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Ruckus may make improvements or changes in the products or services described in this content at any time. The capabilities, system requirements and/or compatibility with third-party products described herein are subject to change without notice.



350 West Java Dr., Sunnyvale, CA 94089 USA

www.ruckusnetworks.com