

RUCKUS® T750

Outdoor 4x4:4 Wi-Fi 6 Access Point with 2.5Gbps Backhaul



Benefits

Great Outdoor Wi-Fi

Experience high performance outdoor Wi-Fi 6 with IP-67 weather proofing and dual backhaul options with SFP and multi-gigabit 2.5 GbE ethernet port.

Connect More Devices Simultaneously

Improve device performance, by enabling more simultaneous device connections with built-in 8 spatial streams (dual-concurrent, 4x4:4 in 5GHz, 4x4:4 in 2.4GHz), MU-MIMO and OFDMA technology while enhancing non-Wi-Fi 6 client performance. Support for up to 1,024 clients.

High Density Performance

Provide exceptional end-user experience within high density public venues such as airports, amusement parks, stadiums, outdoor arenas, and other dense outdoor urban environments with the RUCKUS Ultra-High-Density Technology Suite.

Converged Access Point

Allow customers to eliminate siloed networks and unify Wi-Fi and IoT wireless technologies into one single network by using built-in BLE and Zigbee, and also expand to any future wireless technologies through the pluggable IoT module.

Power Other Devices

Daisy chain and power other devices like an IP camera, or another AP directly from the 1 GbE PoE output port.

Multiple Management Options

Manage the T750 from the cloud, with on-premises physical/virtual appliances, or without a controller.

Enhanced Security

Reinforce security with WPA3, the latest Wi-Fi security standard and receive enhanced protection from man-in-the-middle attacks.

Outdoor locations such as stadiums, arenas can have the most demanding wireless requirements due to high client density. The RUCKUS® T750 access point (AP), based on the latest Wi-Fi 6 standard, brings in multi-gigabit Wi-Fi to support the ever raising expectation for highest quality of service from the users. T750 is IP-67 rated to withstand the rigors of outdoor deployments.

The RUCKUS T750 is our high-end dual-band, dual-concurrent Wi-Fi 6 AP that supports eight spatial streams (4x4:4 in 5GHz, 4x4:4 in 2.4GHz). The T750, with OFDMA and MU-MIMO capabilities, efficiently manages up to 1,024 client connections with increased capacity, improved coverage and performance in ultra-high dense environments. Furthermore, the 2.5 GbE ethernet ensures that the backhaul will not be a bottleneck for full use of available Wi-Fi capacity.

The T750 addresses the increasing client demands in public venues such as airports, convention centers, plazas, malls, and other dense urban environments. It is the perfect choice for data-intensive streaming multimedia applications like 4K video transmissions, while supporting latency sensitive voice and data applications with stringent quality-of-service requirements.

The T750 is also easy to manage through physical, virtual and cloud management options.

The T750 is also designed with a small form factor pluggable (SFP) fiber interface that enable seamless connectivity to a fiber backhaul. The T750 boasts a built-in GPS. Furthermore, 1GbE PoE output port can power a variety of devices like an IP-based camera or even another AP.

In addition, organizations are increasingly leveraging IoT-based sensors to serve their customers better. These sensors run on non-Wi-Fi wireless technologies such as Wi-Fi , BLE or Zigbee. Organizations need a unified platform to eliminate network silos. The RUCKUS AP portfolio is equipped to solve these challenges.

The T750 has built-in IoT radios with onboard BLE and Zigbee capabilities. In addition, the T750 is a converged access point that allows customers to seamlessly integrate any new wireless technologies with pluggable IoT module.

The T750 when paired with the RUCKUS Ultra-High-Density Technology Suite found only in the RUCKUS Wi-Fi portfolio, dramatically improves network performance through a combination of patented wireless innovations and learning algorithms that includes:

- **Airtime Decongestion:** Increases average network throughput in heavily congested environments
- **Transient Client management:** Reduces interference traffic from unconnected Wi-Fi devices
- **BeamFlex® + Antennas:** Extended coverage and optimized throughput with patented multi-directional antennas and radio patterns

Whether you are deploying ten or ten thousand APs, the T750 is also easy to manage through RUCKUS' physical and virtual management options.

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Access Point Antenna Pattern

RUCKUS' BeamFlex+ adaptive antennas allow the T750 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.

Figure 1. Example of BeamFlex+ pattern

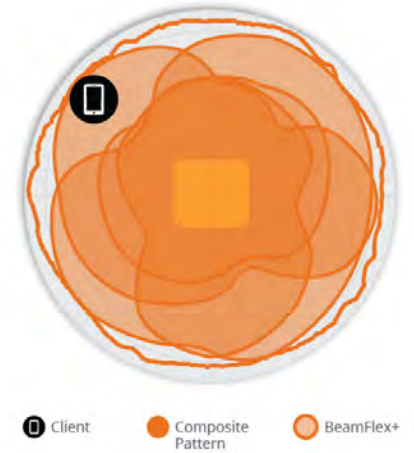


Figure 2. T750 2.4GHz Azimuth Antenna Patterns



Figure 3. T750 5GHz Azimuth Antenna Patterns



Figure 4. T750 2.4GHz Elevation Antenna Patterns



Figure 5. T750 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.

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Wi-Fi	
Wi-Fi Standards	IEEE 802.11a/b/g/n/ac/ax
Supported Rates	802.11ax: 4 to 2400 Mbps 802.11ac: 6.5 to 1732 Mbps 802.11n: 6.5 to 600 Mbps 802.11a/g: 6 to 54 Mbps 802.11b: 1 to 11 Mbps
Supported Channels	2.4GHz: 1-13 5GHz: 36-64, 100-144, 149-165
MIMO	4x4 SU-MIMO 4x4 MU-MIMO
Spatial Streams	4 for both SU-MIMO & MU-MIMO
Radio Chains and Streams	4x4:4
Channelization	20, 40, 80, 160MHz
Security	- WPA-PSK, WPA-TKIP, WPA2-Personal, WPA2-Enterprise, WPA3-Personal, WPA3-Enterprise, AES, 802.11i, Dynamic PSK, OWE - 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		
	T750	T750SE
Antenna Type	- BeamFlex+ adaptive antennas with polarization diversity - Adaptive antenna that provides 4,000+ unique antenna patterns per band - T750 provides internal omni-directional antenna; and T750se provides internal 120-degree sectorized antenna with option to attach an external antenna	
Antenna Gain (max)	2.4GHz: 1.6dBi 5GHz: 3.4dBi	2.4GHz: 6.0dBi 5GHz: 8.0dBi
Peak Transmit Power (Tx port/chain + Combining gain)	2.4GHz: 28dBm 5GHz: 28dBm	
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 (dBm)							
HT20				HT40			
MCS0		MCS7		MCS0		MCS7	
-98		-79		-95		-76	
HE20				HE40			
MCS0	MCS7	MCS9	MCS11	MCS0	MCS7	MCS9	MCS11
-98	-79	-76	-70	-95	-76	-73	-67

5GHZ RECEIVE SENSITIVITY (dBm)											
VHT20				VHT40				VHT80			
MCS0	MCS7	MCS8	MCS9	MCS0	MCS7	MCS8	MCS9	MCS0	MCS7	MCS8	MCS9
-98	-80	-77	-	-95	-77	-	-72	-92	-74	-	-69
HE20				HE40				HE80			
MCS0	MCS7	MCS9	MCS11	MCS0	MCS7	MCS9	MCS11	MCS0	MCS7	MCS9	MCS11
-98	-80	-75	-70	-95	-77	-72	-67	-92	-74	-69	-64

2.4GHZ TX POWER TARGET (PER CHAIN)	
Rate	Pout (dBm)
MCS0, HT20	22
MCS7, HT20	19.5
MCS8, HE20	19
MCS9, HE40	18.5
MCS11, HE40	17

5GHZ TX POWER TARGET (PER CHAIN)	
Rate	Pout (dBm)
MCS0, VHT20	22
MCS7, VHT40, VHT80	20
MCS9, VHT40, VHT80	18.5
MCS11, HE20, HE40, HE80	17

PERFORMANCE AND CAPACITY	
Peak PHY Rates	2.4 GHz: 1148 Mbps 5 GHz: 2400 Mbps
Client Capacity	Up to 1024 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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NETWORKING	
Controller Platform Support	- SmartZone - ZoneDirector - Cloud - Standalone - Unleashed
Mesh	SmartMesh™ wireless meshing technology. Selfhealing Mesh
IP	IPv4, IPv6, dual-stack
VLAN	802.1Q (1 per BSSID or dynamic per user based on RADIUS) - VLAN Pooling - Port-based
802.1x	Authenticator & Supplicant
Tunnel	L2TP, GRE, Soft-GRE
Policy Management Tools	- Application Recognition and Control - Access Control Lists - Device Fingerprinting - Rate Limiting
IoT Capable	Yes

OTHER RADIO TECHNOLOGIES	
GPS	Types GLONAS...etc

PHYSICAL INTERFACES		
	T750	T750SE
Ethernet	1x2.5 Gbps, 1 x 10/100/1000 Mbps ports, RJ-45 - LACP	
Fiber	SFP, 1Gbps, SFP+ 10 Gbps	
USB	1 USB 2.0 port, Type A	—
External Antenna Connectors	—	4x N-type female connectors

PHYSICAL CHARACTERISTICS		
	T750	T750SE
Physical Size	34.64cm (L), 24.06cm (W), 10.17cm (H) 13.64in (L) x 9.47in (W) x 4.0in (H)	34.08cm (L), 24.06cm (W), 11.17cm (H) 13.42in (L) x 9.47in (W) x 4.4in (H)
Weight	2.84kg 6.27lbs	3.31kg 7.3lbs
Mounting	- Pole Mount - Wall Mount - Flat Surface - Bracket included in the box	
Operating Temperature	-40°C (-40°F) to 65°C (145°F)	
Operating Humidity	Up to 95%, non-condensing	
Wind Survivability	Up to 266km/h (165mph)	

POWER		
Mode	Power Consumption	System Configuration
AC Power	63.7W (SFP+ Backhaul) 64.6W (Ethernet Backhaul)	- Full Functionality 2nd Ethernet Port enabled - PSE Out (26W) available - Onboard IoT enabled - USB enabled (3W) - omni SKU
802.3bt Class 7 (Maximum Functionality With PSE Out)	57W	- Full Functionality 2nd Ethernet Port enabled - PSE Out (26W) available - Onboard IoT enabled - USB enabled (3W) - omni SKU
802.3at (Reduced Functionality Without PSE)	24.2W	2nd Ethernet Port enabled - PSE Out disabled - Onboard IoT enabled - USB enabled (3W) - omni SKU
Idle	10.75W	2nd Ethernet Port enabled - PSE Out disabled - Onboard IoT disabled - USB disabled

Certifications and Compliance	
Wi-Fi Alliance*	- Wi-Fi CERTIFIED™ a, b, g, n, ac - Wi-Fi CERTIFIED™ 6 - Wi-Fi Enhanced Open™ - WPA2™ - Personal - WPA2™ - Enterprise - WPA3™ - Personal - WPA3™ - Enterprise - Wi-Fi Agile Multiband™ - Wi-Fi Optimized Connectivity™ - Wi-Fi Vantage™ - WMM® - Passpoint®
Standards Compliance**	- 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 - EN 62311 Human Safety/RF Exposure - WEEE & RoHS - ISTA 2A Transportation

*For complete list of WFA certifications, please see the Wi-Fi Alliance website.

**For current certification status, please see the price list.

Software and Services	
Location based services	SPoT
Network Analytics	- SmartCell Insight (SCI) - RUCKUS Analytics
Security and Policy	Cloudpath

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ORDERING INFORMATION	
901-T750-XX01	RUCKUS T750 Wi-Fi 6 Outdoor Wireless Access Point, 4x4:4 Stream, Omnidirectional Beamflex+ coverage, 2.4GHz and 5GHz concurrent dual band, (1x) 2.5G Ethernet port, (1x) 10/100/1000 Ethernet port, 100-240 Vac, POE in and PSE out, Fiber SFP/SFP+, GPS, IP-67 Outdoor enclosure, -40 to 65C Operating Temperature. Mounting bracket included. Does not include power adapter.
901-T750-XX02	RUCKUS T750 Wi-Fi 6 Outdoor Wireless Access Point, 4x4:4 Stream, Omnidirectional Beamflex+ coverage, 2.4GHz and 5GHz concurrent dual band, (1x) 2.5G Ethernet port, (1x) 10/100/1000 Ethernet port, 100-240 Vac, POE in and PSE out, Fiber SFP/SFP+, IP-67 Outdoor enclosure, -40 to 65C Operating Temperature. No GPS functionality. Mounting bracket included. Does not include power adapter.
901-T750-XX51	RUCKUS T750SE Wi-Fi 6 Outdoor Wireless Access Point, 4x4:4 Stream, 120-Degree Sector antenna included and option to attach external antennae, 2.4GHz and 5GHz concurrent dual band, (1x) 2.5G Ethernet port, (1x) 10/100/1000 Ethernet ports, 100-240 Vac, POE in and PSE out, Fiber SFP/SFP+, GPS, IP-67 Outdoor enclosure, -40 to 65C Operating Temperature. Mounting bracket included. Does not include power adapter.
901-T750-XX52	RUCKUS T750SE Wi-Fi 6 Outdoor Wireless Access Point, 4x4:4 Stream, 120-Degree Sector antenna included and option to attach external antennae, 2.4GHz and 5GHz concurrent dual band, (1x) 2.5G Ethernet port, (1x) 10/100/1000 Ethernet ports, 100-240 Vac, POE in and PSE out, Fiber SFP/SFP+, IP-67 Outdoor enclosure, -40 to 65C Operating Temperature. No GPS functionality. Mounting bracket included. Does not include power adapter.

See RUCKUS price list for country-specific ordering information. PLEASE NOTE: When ordering 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 1-year warranty. For details see: <http://support.ruckuswireless.com/warranty>.

OPTIONAL ACCESSORIES	
902-0180-XX00	PoE Injector (60W)
902-0125-0000	Secure articulating mounting bracket
902-0134-0000	Outdoor AP mounting bracket (weatherized aluminum), 180-degree adjustment range in both azimuth and elevation. Mounting support for solid wall or ceiling, vertical or horizontal pole 1" to 4" in diameter using enclosed mounting hardware. Pole diameter greater than 4" can be supported with user-supplied clamps.
902-1180-XX00	Multigigabit PoE injector (2.5/5/10)-BaseT PoE port, 60W
911-2120-0000	2.4GHz & 5GHz 14/14.5dBi 4-port directional H/V high gain antenna; with 30 degrees 3dBm beam width and 4 N-type female connectors
E1MG-LX-OM	1000Base-LX SFP optic, SMF, LC connector, Optical Monitoring Capable
E1MG-SX-OM	1000Base-SX SFP optic, MMF, LC connector, Optical Monitoring Capable
E1MG-SX-OM-8	1000BASE-SX SFP optic MMF, LC connector, optical monitoring capable, 8-pack
10G-SFPP-SR	10GBASE-SR, SFP+ optic (LC), target range 300m over MMF
10G-SFPP-LR	10GBASE-LR, SFP+ optic (LC), for up to 10km over SMF
10G-SFPP-USR	10GBASE-USR, SFP+ optic (LC), target range 100m over MMF
10G-SFPP-ER	10GBASE-ER SFP+ optic (LC), for up to 40km over SMF

PLEASE NOTE: 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.

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