

T750

Outdoor 802.11ax 4x4:4 Wi-Fi AP 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 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

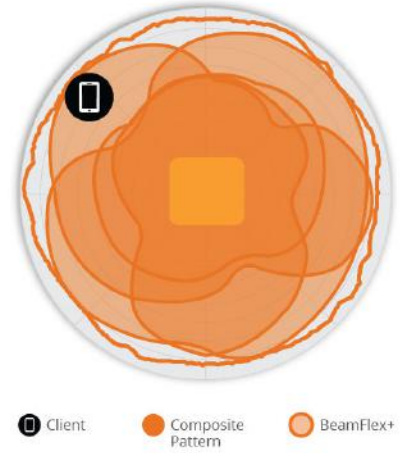


Figure 2. T750 2.4GHz Azimuth Antenna Patterns



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	<ul style="list-style-type: none"> IEEE 802/11a/b/g/n/ac/ax
Supported Rates	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 2.4GHz: 1-13 5GHz: 36-64, 100-144, 149-165
MIMO	<ul style="list-style-type: none"> 4x4 SU-MIMO 4x4 MU-MIMO
Spatial Streams	<ul style="list-style-type: none"> 4 for both SU-MIMO & MU-MIMO
Radio Chains and Streams	<ul style="list-style-type: none"> 4x4:4
Channelization	<ul style="list-style-type: none"> 20, 40, 80, 160MHz
Security	<ul style="list-style-type: none"> WPA-PSK, WPA-TKIP, WPA2 AES, WPA3, 802.11i, Dynamic PSK, OWE 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 4,000+ unique antenna patterns per band
Antenna Gain (max)	<ul style="list-style-type: none"> Up to 3dBi
Peak Transmit Power (Tx port/chain + Combining gain)	<ul style="list-style-type: none"> 2.4GHz: 26dBm 5GHz: 28dBm
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 (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	20
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	<ul style="list-style-type: none"> 2.4 GHz: 1148 Mbps 5 GHz: 2400 Mbps
Client Capacity	<ul style="list-style-type: none"> Up to 1024 clients 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

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NETWORKING	
Controller Platform Support	<ul style="list-style-type: none"> SmartZone ZoneDirector Standalone
Mesh	<ul style="list-style-type: none"> SmartMesh™ wireless meshing technology. Selfhealing Mesh
IP	<ul style="list-style-type: none"> IPv4, IPv6, dual-stack
VLAN	<ul style="list-style-type: none"> 802.1Q (1 per BSSID or dynamic per user 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
IoT Capable	<ul style="list-style-type: none"> Yes

OTHER RADIO TECHNOLOGIES	
GPS	<ul style="list-style-type: none"> Types GLONAS...etc

PHYSICAL INTERFACES	
Ethernet	<ul style="list-style-type: none"> 1x2.5 Gbps, 1 x 10/100/1000 Mbps ports, RJ-45 LACP
Fiber	<ul style="list-style-type: none"> SFP, 1Gbps, SFP+ 10 Gbps
USB	<ul style="list-style-type: none"> 1 USB 2.0 port, Type A (On Omni SKU only)

PHYSICAL CHARACTERISTICS	
Physical Size	<ul style="list-style-type: none"> 34.64cm (L), 24.06cm (W), 10.17cm (H) 13.64in (L) x 9.47in (W) x 4.0in (H)
Weight	<ul style="list-style-type: none"> 2.84kg 6.27lbs
Mounting	<ul style="list-style-type: none"> Pole Mount
Operating Temperature	<ul style="list-style-type: none"> -40°C (-40°F) to 65°C (145°F)
Operating Humidity	<ul style="list-style-type: none"> Up to 95%, non-condensing
Wind Survivability	<ul style="list-style-type: none"> Up to 266km/h (165mph)

POWER		
Mode	Power Consumption	System Configuration
AC Power	64.6W (SFP+ Backhaul) 63.7W (Ethernet Backhaul)	<ul style="list-style-type: none"> Full Functionality 2nd Ethernet Port enabled PSE Out (26W) Available Onboard IoT enabled USB Enabled (3W)
802.3bt Class 7 (Maximum Functionality With PSE Out)	57W	<ul style="list-style-type: none"> Full Functionality 2nd Ethernet Port enabled PSE Out (26W) Available Onboard IoT enabled USB Enabled (3W)
802.3bt Class 5 (Reduced Functionality With PSE Out Disabled)	31W	<ul style="list-style-type: none"> Full Functionality 2nd Ethernet Port enabled PSE Out Disabled Onboard IoT enabled
802.3at (Reduced Functionality Without USB)	24.2W	<ul style="list-style-type: none"> Full Functionality 2nd Ethernet Port enabled PSE Out Disabled Onboard IoT enabled USB Disabled
Idle	10.75W	<ul style="list-style-type: none"> 2nd Ethernet Port enabled PSE Out Disabled Onboard IoT disabled USB Disabled

Certifications and Compliance	
Wi-Fi Alliance*	<ul style="list-style-type: none"> Wi-Fi CERTIFIED™ a, b, g, n, ac, ax (Wi-Fi 6) Passpoint®, Vantage
Standards Compliance**	<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 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	<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

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ORDERING INFORMATION	
901-T750-XX01	<ul style="list-style-type: none"> Ruckus T750 802.11ax 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.
901-T750-XX51	<ul style="list-style-type: none"> Ruckus T750S 802.11ax 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.

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>.

OPTIONAL ACCESSORIES	
902-0180-XX00	<ul style="list-style-type: none"> PoE Injector (60W)
902-1170-XX00	<ul style="list-style-type: none"> Power Supply (48V, 0.75A, 36W)
902-0125-000	<ul style="list-style-type: none"> Spare, Articulating Mounting Bracket
902-0134-000	<ul style="list-style-type: none"> Outdoor Mounting Kit, 180 degree angle
902-0195-0000	<ul style="list-style-type: none"> Spare, T-bar ceiling mount kit for mounting to flush frame ceiling
E1MG-BXD	<ul style="list-style-type: none"> 1000BASE-BXD SFP optic SMF, transmits at 1490nm and receives at 1310nm, LC connector, single strand SMF fiber. This optic should only be connected to an E1MG-BXU at the far end
E1MG-BXU	<ul style="list-style-type: none"> 1000BASE-BXU SFP optic SMF, transmits at 1310nm and receives at 1490nm, LC connector, single strand SMF fiber. This optic should only be connected to an E1MG-BXD at the far end
E1MG-LHA-OM	<ul style="list-style-type: none"> 1000BASE-LHA SFP optic, SMF, LC connector, optical monitoring capable
E1MG-LHA-OM-T	<ul style="list-style-type: none"> 1000BASE-LHA SFP optic, SMF, LC connector, optical monitoring capable, industrial temperature (-40°C to 85°C)
E1MG-LX-OM	<ul style="list-style-type: none"> 1000Base-LX SFP optic, SMF, LC connector, Optical Monitoring Capable
E1MG-LX-OM-8	<ul style="list-style-type: none"> 1000BASE-LX SFP optic, SMF, LC connector, optical monitoring capable, 8-pack
E1MG-LX-OM-T	<ul style="list-style-type: none"> 1000Base-LX SFP optic, SMF, LC connector, Optical Monitoring Capable, Industrial Temperature
E1MG-SX-OM	<ul style="list-style-type: none"> 1000Base-SX SFP optic, MMF, LC connector, Optical Monitoring Capable
E1MG-SX-OM-8	<ul style="list-style-type: none"> 1000BASE-SX SFP optic MMF, LC connector, optical monitoring capable, 8-pack
E1MG-SX-OM-T	<ul style="list-style-type: none"> 1000Base-SX SFP optic, MMF, LC connector, Optical Monitoring Capable, Industrial Temperature
E1MG-LX-A	<ul style="list-style-type: none"> 1000BASE-LX SFP Optic, SMF, LC connector, Optical Monitoring Capable, TAA compliant
E1MG-LX-A8	<ul style="list-style-type: none"> 1000BASE-LX SFP Optic, SMF, LC connector, Optical Monitoring Capable, TAA compliant, 8-pack
E1MG-SX-A	<ul style="list-style-type: none"> 1000BASE-SX SFP Optic, MMF, (LC), Optical Monitoring Capable, TAA compliant
E1MG-SX-A8	<ul style="list-style-type: none"> 1000BASE-SX SFP Optic, MMF, (LC), Optical Monitoring Capable, TAA compliant, 8-pack

OPTIONAL ACCESSORIES (CONTINUED...)	
10G-SFPP-SR-SA	<ul style="list-style-type: none"> 10GBASE-SR, SFP+ optic (LC), target range 300m over MMF, standard temperature (0°C to 70°C),TAA compliant
10G-SFPP-SR-SA8	<ul style="list-style-type: none"> 10GBASE-SR, SFP+ optic (LC), target range 300m over MMF, standard temperature (0°C to 70°C),TAA compliant, 8 pack
10G-SFPP-SR-S	<ul style="list-style-type: none"> 10GBASE-SR,SFPP MMF LC CONNECTOR (No TAA)
10G-SFPP-SR-S8	<ul style="list-style-type: none"> 10GBASE-SR,SFPP MMF LC CONNECTOR 8-PACK (No TAA)
10G-SFPP-LR-SA	<ul style="list-style-type: none"> 10GBASE-LR, SFP+ optic (LC), for up to 10km over SMF, standard temperature (0°C to 70°C), TAA compliant
10G-SFPP-LR-SA8	<ul style="list-style-type: none"> 10GBASE-LR, SFP+ optic (LC), for up to 10km over SMF, - standard temperature (0°C to 70°C), TAA compliant, - 8 pack
10G-SFPP-LR-S	<ul style="list-style-type: none"> 10GBASE-LR,SFPP SMF LC CONNECTOR (No TAA)
10G-SFPP-LR-S8	<ul style="list-style-type: none"> 10GBASE-LR,SFPP SMF LC CONNECTOR 8-PACK (No TAA)
10G-SFPP-USR-SA	<ul style="list-style-type: none"> 10GE USR SFP+ OPTIC (LC),RANGE 100M MMF,Standard Temperature, TAA Compliant,1-Pack
10G-SFPP-USR-SA8	<ul style="list-style-type: none"> 10GE USR SFP+ OPTIC (LC),RANGE 100M MMF,Standard Temperature, TAA Compliant,8-Pack

PLEASE NOTE: When ordering Indoor 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.

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