RUCKUS® T670

Outdoor Wi-Fi 7 (802.11be) Access Point with 9.34 Gbps Data Rate

BENEFITS

Connect more devices simultaneously
Improve device performance, by enabling more simultaneous device connections with 6 spatial streams (2x2:2 in 2.4GHz, 5GHz, and 6GHz) technology. 9.34 Gbps Combined data rate.

High client density and performance
Provides exceptional end-user experience within large meeting halls, general enterprise spaces, and large classrooms.

BeamFlex+ Adaptive Antenna Technology
For greater speed, fewer errors, and instant bandwidth delivery, RUCKUS BeamFlex+ patented technology offers first-of-its-kind smart antenna technology that maximizes signal coverage, throughput, and network capacity and work with any client. It further increases MIMO diversity gain and maximizes spatial multiplexing potential.

Great Outdoor Wi-Fi
Experience high performance outdoor Wi-Fi 7 with IP-67 weather proofing and multi-gigabit 5 GbE Ethernet port.

5 GbE minimizes bottleneck
Optimized multi-gigabit Wi-Fi performance delivered using the built-in 1/2.5/5GbE port to connect to multi-gigabit switches.

Built-in GPS
Facilitate the deployment of Automated Frequency Coordination (AFC) ensuring adherence to regulatory requirements for 6GHz frequency use.

Multiple management options
Manage the T670 with on premise physical/ virtual appliances and control auto-provisioning for faster deployment and seamless firmware upgrades.

Enhanced Security
The latest Wi-Fi security standard with WPA3 and receive enhanced protection from man-in-the-middle attacks. Adds the power of RUCKUS DPSK3 to WPA3/SAE combining enhanced security with the flexibility and ease of use of dynamic passphrase to secure network access.

More Than Wi-Fi
Support solutions beyond Wi-Fi with RUCKUS AI, RUCKUS One, RUCKUS Cloudpath Enrollment System and onboarding software

IoT READY
Eliminate siloed networks and unify Wi-Fi and IoT technologies into one single network with the addition of an optional USB module.

Bandwidth-hungry ultra-high definition video, virtual reality, an explosion of new devices and content. With these kinds of demands, organizations in every industry need more from their Wi-Fi. But with hundreds of devices and nonstop wireless noise and interference, busy outdoor spaces can make challenging wireless environments.

The dawn of the Wi-Fi 7 era ushers in a new wave of possibilities. With its groundbreaking advancements in speed, capacity, latency, and reliability, Wi-Fi 7 will transform the way we connect and interact with the digital world.

From seamless streaming of ultra-high-definition content to immersive virtual and augmented reality experiences, Wi-Fi 7 enables applications that were previously unimaginable. Real-time social gaming can reach new heights, allowing for lag-free, competitive multiplayer experiences with unparalleled responsiveness.

Moreover, industries such as hospitality and education can benefit immensely from Wi-Fi 7 low latency and high reliability. Other verticals like, MDUs, large public venues and service providers gain greatly from Wi-Fi 7 unprecedented advancements in speed and capacity.

The RUCKUS T670 is a high-end Wi-Fi 7, tri-band concurrent outdoor AP that delivers 6 spatial streams (2x2:2 in 2.4GHz/5GHz/6GHz or, in dual-band mode, 2x2:2 in 2.4GHz and 4x4:4 in 5GHz) With Multi-Link-Operation (MLO), Preamble Puncturing, 4K QAM Modulation and 320MHz channels. It delivers industry-leading performance environments with a combined data rate of 9.34 Gbps. Furthermore, a 5 Gbps Ethernet port minimizes wired backhaul bottleneck for full use of available Wi-Fi capacity.

The T670 addresses the increasing client demands in transit hubs, stadiums, conference centers, and other high traffic outdoor spaces. It is the perfect choice for data-intensive streaming multimedia applications like 4K/8K video transmissions, while supporting latency sensitive voice and data applications with stringent quality-of-service requirements.

The T670, with built-in RUCKUS exclusive technology, 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®+ Adaptive Antennas:** Extended coverage range and optimized throughput with patented dynamic multi-directional antennas and radio patterns and work with any client.

Enterprises are increasingly relying on a variety of wireless technologies beyond Wi-Fi, such as BLE and Zigbee, leading to fragmented network silos. To address this, a unified platform is essential. The **RUCKUS IoT solution** brings these diverse wireless technologies together under a single platform, seamlessly integrating Wi-Fi, BLE, Zigbee, and more. The RUCKUS T670 supports this unified approach with a USB port that enables an optional pluggable BLE and Zigbee IoT module, ensuring streamlined connectivity across wireless networks.

Whether you are deploying ten or ten thousand APs, the T670 is also easy to manage through RUCKUS multiple management options including cloud based and on premises controllers.

RUCKUS BeamFlex Smart Adaptive Antenna

Access Point BeamFlex Antenna Pattern

RUCKUS' BeamFlex+ adaptive antennas allow the T670 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

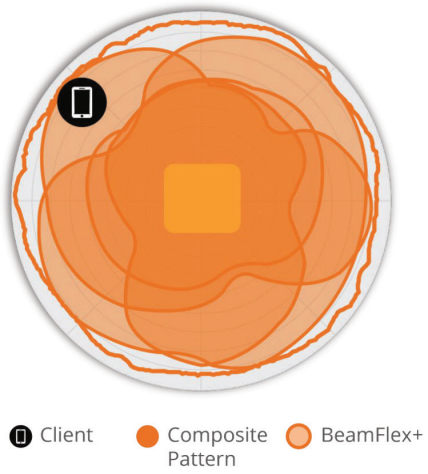


Figure 2. T670 2.4GHz Azimuth Antenna Patterns

Figure 3. T670 5GHz Azimuth Antenna Patterns

Figure 4. T670 6GHz Azimuth Antenna Patterns

Figure 5. T670 2.4GHz Elevation Antenna Patterns

Figure 6. T670 5GHz Elevation Antenna Patterns

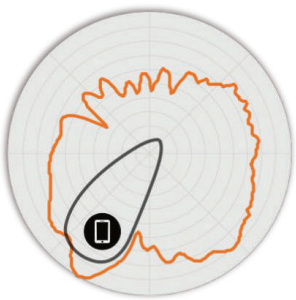
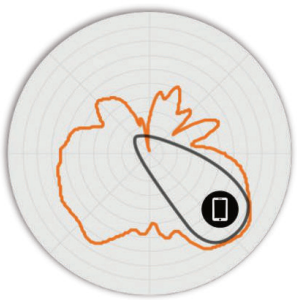


Figure 7. T670 6GHz Elevation Antenna Patterns



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	• IEEE 802/11a/b/g/n/ac/ax/be, Wi-Fi 7
Supported Rates	• 802.11be: 4 to 5765 Mbps • 802.11ax: 4 to 4804 Mbps • 802.11ac: 6.5 to 866 Mbps • 802.11n: 6.5 to 300 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 • 6GHz: 1-233
MIMO	• 2x2 SU-MIMO in tri-band mode. 4x4(5GHz) in dual-band • 2x2 MU-MIMO in tri-band mode. 4x4(5GHz) in dual-band
Spatial Streams	• 2 in tri-band mode or 4 in dual-band mode at 5GHz
Radio Chains and Streams	• 2x2:2 in all 3 bands. 4x4:4(5GHz) in dual-band mode
Channelization	• 20, 40, 80, 160, 320 MHz
Security	• WEP, WPA, WPA-PSK, WPA2, WPA2-PSK, WPA3, WPA3-SAE, OWE, PMF (802.11w), Dynamic PSK, DPSK3 • WIPS/WIDS. TPM 2.0, Secure Boot
Other Wi-Fi Features	• WMM, Power Save, Tx Beamforming, LDPC, STBC, 802.11r/k/v, MBO • MLO (Multi-link operation), Preamble Puncturing • Web Authentication and Guest Access • Hotspot, Hotspot 2.0 • Captive Portal • WISPr

RF	
Antenna Type	• BeamFlex+ adapt.ve antennas with polarization diversity • Adaptive antenna that provides 4,000+ unique antenna patterns per band
Antenna Gain (max)	• Up to 3.2dBi
Peak Transmit Power (Tx port/ chain + Combining gain)	• 2.4GHz: 25dBm • 5GHz: 25dBm (2x2). 28dBm (4x4) • 6GHz: 25dBm
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) • U-NII-5 (5.925–6.425GHz) • U-NII-6 (6.425–6.525GHz) • U-NII-7 (6.525–6.875GHz) • U-NII-8 (6.875–7.125GHz)

2.4GHZ RECEIVE SENSITIVITY (dBm)

HT20		HT40		VHT20		VHT40	
MCS0	MCS7	MCS0	MCS7	MCS0	MCS7	MCS0	MCS7
-97	-79	-94	-76	-97	-79	-94	-76
HE20/EHT20				HE40/EHT40			
MCS0	MCS7	MCS9	MCS11	MCS0	MCS7	MCS9	MCS11
-97	-79	-74	-68	-94	-76	-71	-65

5GHZ RECEIVE SENSITIVITY (dBm) in 2x2 tri-band mode

HT20/VHT20				HT40/VHT40				VHT80			
MCS0	MCS7	MCS8	MCS9	MCS0	MCS7	MCS8	MCS9	MCS0	MCS7	MCS8	MCS9
-96	-79	-76	-73	-93	-75	-73	-70	-90	-72	-70	-67
HE20/EHT20				HE40/EHT40				HE80/EHT80			
MCS0	MCS9	MCS13		MCS0	MCS9	MCS13		MCS0	MCS9	MCS13	
-96	-73	-61		-93	-70	-58		-90	-67	-55	
HE160/EHT160											
MCS0	MCS9	MCS13									
-87	-64	-52									

5GHZ RECEIVE SENSITIVITY (dBm) in 4x4 dual-band mode

HT20/VHT20				HT40/VHT40				VHT80			
MCS0	MCS7	MCS8	MCS9	MCS0	MCS7	MCS8	MCS9	MCS0	MCS7	MCS8	MCS9
-100	-82	-79	-76	-97	-79	-76	-73	-94	-76	-73	-70
HE20/EHT20				HE40/EHT40				HE80/EHT80			
MCS0	MCS9	MCS13		MCS0	MCS9	MCS13		MCS0	MCS9	MCS13	
-100	-76	-64		-97	-73	-61		-94	-70	-58	
HE160/EHT160											
MCS0	MCS9	MCS13									
-91	-67	-55									

6GHZ RECEIVE SENSITIVITY (dBm)

HE20/EHT20			HE40/EHT40			HE80/EHT80		
MCS0	MCS9	MCS13	MCS0	MCS9	MCS13	MCS0	MCS9	MCS13
-96	-73	-61	-93	-70	-58	-90	-67	-55
HE160/EHT160				EHT320				
MCS0	MCS9	MCS11	MCS13	MCS0	MCS9	MCS11	MCS13	
-87	-64	-58	-52	-84	-61	-55	-49	

2.4GHZ TX POWER TARGET (PER CHAIN)

Rate	Pout (dBm)
MCS0, HT20	22
MCS7, HT20	19
MCS9, VHT20	18
MCS11, HE40	16
MCS13, EHT40	12

5GHZ TX POWER TARGET (PER CHAIN)

Rate	Pout (dBm)
MCS0, HT40	22
MCS7, HT40	19
MCS9, VHT80	17.5
MCS11, HE160	16
MCS13, EHT160	14

6GHZ TX POWER TARGET (PER CHAIN)

Rate	Pout (dBm)
MCS0, HT40	22
MCS7, HT40	17.5
MCS9, VHT80	16.5
MCS11, HE160	15
MCS13, EHT320	13

POWER CONSUMPTION			
Mode	**Max Power**	**Capabilities**	**Wi-Fi Radios**
DC Power	35W	*Full Functionality* • 5Gbps Ethernet Enabled • 1Gbps Ethernet Enabled • GPS Enabled • USB Enabled (3W)	*Full Functionality* Tri-band mode: • 2.4GHz (2x2) Tx 22 dBm • 5GHz (2x2) Tx 22 dBm • 6GHz (2x2) Tx 22 dBm Dual-band mode: • 2.4GHz (2x2) Tx 22 dBm • 5GHz (4x4) Tx 22 dBm
802.3bt5 PoH, uPoE			
802.3at	25.5W	• 5Gbps Ethernet Enabled • 1Gbps Ethernet Enabled • USB Disabled (0W) • GPS Enabled	Tri-band mode: • 2.4GHz (2x2) Tx 19 dBm • 5GHz (2x2) Tx 20 dBm • 6GHz (2x2) Tx 20 dBm Dual-band mode: • 2.4GHz (2x2) Tx 20 dBm • 5GHz (4x4) Tx 21 dBm

PERFORMANCE AND CAPACITY	
Peak PHY Rates	• 2.4GHz: 689 Mbps • 5GHz: 5765 Mbps (4x4:4) or 2882 Mbps (2x2:2) • 6GHz: 5765 Mbps
Client Capacity	• Up to 768 clients per AP
SSID	• Up to 36 per AP

RUCKUS RADIO MANAGEMENT	
Antenna Optimization	• BeamFlex+ • Polarization Diversity with Maximal Radio 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, QoS Mirroring • Directed Multicast • L2/L3/L4 ACLs
Mobility	• SmartRoam
Diagnostic Tools	• Spectrum Analysis • SpeedFlex

NETWORKING	
Controller Platform Support	• SmartZone • RUCKUS Unleashed* • RUCKUS One
Mesh	• SmartMesh™ wireless meshing technology. Self-healing Mesh in 2.4GHz, 5GHz, and 6GHz
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	• GRE, Soft-GRE
Policy Management Tools	• Application Recognition and Control • Access Control Lists • Device Fingerprinting • Rate Limiting • URL Filtering

PHYSICAL INTERFACES	
Ethernet	• One 100M/1/2.5/5GbE Ethernet (PoE) port and one 10M/100M/1GbE Ethernet port • Power over Ethernet (802.3af/at/bt) with Category 5e (or better) cable • LLDP support
USB	• 1 USB 2.0 port, Type C
DC Power	• 48V DC Terminal Block

PHYSICAL CHARACTERISTICS	
Physical Size	• 24.8cm (L), 23.8cm (W), 10.8.cm (H) • 9.8in (L) x 9.4in (W) x 4.3in (H)
Unit Weight	• 1.97kg (4.34 lbs)
Mounting	• Wall Mount, Pole 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	• 165 Miles Per Hour

Product owner is responsible to abide by the country of deployment spectrum regulations when configuring and deploying this product/device.

The 6GHz band is enabled in countries where it is authorized by the local regulations. AP operates as per local regulations via country regulatory domain, otherwise 6GHz radio is disabled. Once this product is cer□fied to operate in a particular country the 6GHz band may be enabled with a future software release.

* *Expected in a future software release.*

CERTIFICATIONS AND COMPLIANCE	
Wi-Fi Alliance[1]	• Wi-Fi CERTIFIED™ a, b, g, n, ac, ax, be (Wi-Fi 6, Wi-Fi 7) • Passpoint®, Vantage
Standards Compliance[2]	• IEC/EN/UL 60950-1 Safety • IEC/EN/UL 62368-1 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

[1] For complete list of WFA certifications, please see Wi-Fi Alliance website.

[2] For current certification status, please see price list.

SOFTWARE AND SERVICES	
Cloud Based Services	• RUCKUS One
Network Analytics	• RUCKUS AI (Formerly known as RUCKUS Analytics)
Security and Policy	• Cloudpath

ORDERING INFORMATION	
901-T670-XX01	RUCKUS T670 Wi-Fi 7 tri-band outdoor wireless Access Point with 2x2:2 (2.4GHz) + 2x2:2 (5GHz) + 2x2:2 (6GHz). Wi-Fi 7 in all three bands. 6GHz SP mode support with AFC. Software configurable to 2x2 (2.4GHz) + 4x4 (5GHz) dual-band mode. BeamFlex+, one 5/2.5/1-Gigabit Ethernet backhaul, one 1-Gigabit port, PoH/uPoE/ 802.3bt PoE support, TPM 2.0, and Secure Boot. 1 USB port, Built-in GPS. Power adapter not included. Includes one year limited warranty. Mounting brackets included.

See RUCKUS price list for country-specific ordering information.
Warranty: Sold with a limited lifetime warranty.
For details see: http://support.ruckuswireless.com/warranty.

OPTIONAL ACCESSORIES	
902-1180-XX00	• Multigigabit PoE injector (2.5/5/10)-BaseT PoE port, 60W
902-0125-0000	• Secure Articulating Mounting Bracket
902-0134-0000	• Secure Articulating Mounting Bracket with 10° increment
902-0183-XX00	• Spare cable gland for weathering the RJ45 port, outdoor AP

PLEASE NOTE: When ordering 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.

About RUCKUS Networks

RUCKUS Networks builds and delivers purpose-driven networks that perform in the demanding environments of the industries we serve. Together with our network of trusted go-to-market partners, we empower our customers to deliver exceptional experiences to the guests, students, residents, citizens and employees who count on them.

www.ruckusnetworks.com

Visit our website or contact your local RUCKUS representative for more information.

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RUCKUS® COMMSCOPE