ZoneFlex T710

Dual-Band 4X4:4 802.11AC Wave 2 Outdoor Smart Wi-Fi AP

Ruckus™ Simply Better Wireless.

DATA SHEET



BENEFITS

INDUSTRY'S HIGHEST PERFORMING 802.11AC WAVE 2 STANDARD

- Transmit to multiple clients at the same time with MU-MIMO
- More efficient use of the RF spectrum
- Improve network efficiency & throughput even for non-Wave 2 clients

BETTER RECEPTION AND MORE CONSISTENT PERFORMANCE

- Adaptive polarization diversity
- Dual-polarized antennas
- Enhanced DFS and Spectrum analysis capability

REDUCED WI-FI INTERFERENCE

- Up to 15 dB of interference mitigation
- Up to 50 percent reduction in co-channel interference to neighboring APs
- Statistical, real-time capacity analysis of all channels to automatically selects best performing channels

IDEAL HIGH-PERFORMANCE OUTDOOR ACCESS POINT

- Fast and easy mounting to street lights, traffic controls and street furniture
- Industrial-grade IP-67 hardened enclosures (-40°C to +65°C)
- Smart Mesh to eliminate cost and time associated with cumbersome Ethernet drops
- Flexible backhaul interfaces such as SFP Fiber and Gigabit Ethernet

Ruckus' High Capacity, High Performance Four-Stream 802.11ac Wave 2 Outdoor AP

The ZoneFlex™ T710 combines Ruckus patented technologies and best-in-class industrial grade design with next generation of 802.11ac features to deliver industry-leading Wi-Fi performance, reliability and coverage for challenging high density outdoor deployments.

Featuring BeamFlex+ adaptive antenna technology, the ZoneFlex T710 offers a substantial increase in performance and range by optimizing antenna coverage on a per client, per transmission basis. BeamFlex+ additionally mitigates co-channel interference by directing Wi-Fi signals where they are needed instead of towards neighboring access points. The T710's BeamFlex+ adaptive antenna system is also equipped with dual polarization antennas, allowing the access point to adapt to the physical orientation of client devices and maximize uplink performance.

With throughput capacities of 800 Mbps (2.4GHz) and 1733 Mbps (5GHz), the ZoneFlex T710 supports the highest available throughput for Wi-Fi clients. 802.11ac Multi-User MIMO (MU-MIMO) support allows the T710 to simultaneously transmit to multiple MU-MIMO capable devices, drastically improving airtime efficiency, overall throughput, and availability. The T710 is compatible with a wide array of MU-MIMO, SU-MIMO and legacy Wi-Fi clients.

The ZoneFlex T710 can function either as a standalone AP or as part of centrally-managed Wireless LAN.

The ZoneFlex T710 is specifically designed with industrial-grade features such as GPS and secure image download. Also included is a SFP fiber interface that enables seamless connectivity to a fiber backhaul with no additional converters. Via Ethernet connections, the T710 supports Link Aggregation Control Protocol (LACP) to optimize backhaul throughput.

The ZoneFlex T710 is purpose-built to deliver unparalleled performance, capacity and coverage in dynamic outdoor environments that are characteristic of high density utilization and interference.

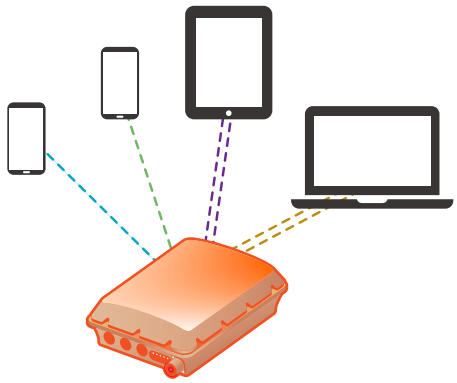
Ideal use cases include: public outdoor hotspots, smart cities, outdoor coverage for enterprise and schools where support for data intensive streaming multimedia applications like HD IP video is imperative.

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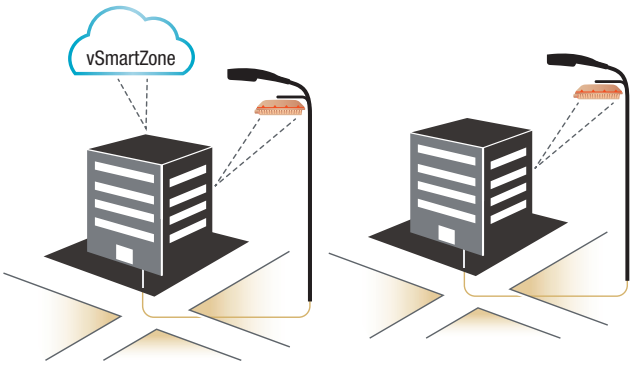
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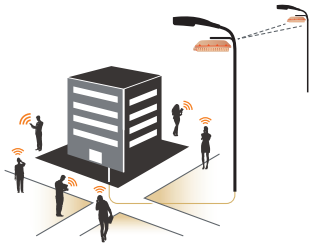
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Blinding fast Wave 2 4x4:4 802.11ac with MU-MIMO



Architectural Felexible



Smart Mesh



FEATURES

- 802.11ac Multi-User MIMO (MU-MIMO)
- Concurrent dual-band (5 GHz/2.4 GHz) support
- 2,533 Mbps maximum PHY rate (1733 Mbps in 5GHz; 800 Mbps in 2.4GHz)
- BeamFlex+ (PD-MRC) smart antenna, with support for 4,000+ unique antenna patterns enables up to 4 dB of additional gain and up to 10 dB of additional interference mitigation
- Antenna options: omni-directional and 120x30 degrees sector
- Unmatched Rx sensitivity down to -104 dBm
- Improved Maximum Ratio Combining (MRC) for best-in-class receive sensitivity
- 802.11ac standard Tx Beamforming
- Space Time Block Coding for increased handset performance
- Low Density Parity Check (LDPC) for increased data throughput at all ranges
- 256-QAM support on 5GHz and 2.4GHz
- Backward compatible with legacy 802.11 clients
- Dedicated dual band RF monitor enabling enhanced performance while providing Zero-Wait DFS capability
- 2 10/100/1000 Ethernet ports
- Support for LACP (Link Aggregation Control Protocol) to maximize the backhaul bandwidth using both Ethernet ports
- SFP Fiber Interface providing flexibility to backhaul to fiber
- AC power input (100-250 Vac, 50/60 Hz)
- 802.3at (PoE+) PoE Input mode of operation
- 802.3at PoE Output Power Sourcing Equipment (PSE) mode of operation, useful for daisy chaining and powering an additional Mesh AP or another device like an IP Surveillance Camera
- IP 67 rated, -40°C to +65°C
- Integrated GPS for location applications
- Built in Wall or Pole mounting options for easy deployment
- Either standalone or centrally managed
- Secure image download – enhancing platform security
- Multicast IP video streaming support
- Four software QoS queues per client station
- Up to 16 BSSIDs per radio with unique QoS and security policies*
- WPA-PSK (AES), 802.1X support for RADIUS and AD*
- Dynamic PSK*
- Admission control/load balancing*
- Band balancing
- Captive portal and guest accounts *

* when used with management.

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PATENTED BEAMFLEX+ TECHNOLOGY EXTENDS SIGNAL RANGE, IMPROVES RELIABILITY OF CLIENT CONNECTIONS

The ZoneFlex T710 integrates patented software-controlled adaptive antennas that delivers additional signal gain per radio chain. As BeamFlex+ adapts to client locations and antenna polarity, the smart antenna technology optimizes the RF energy toward client on a per packet basis. This allows for substantial performance improvement and a reduction in packet loss from the ability to automatically mitigate interference and obstacles. BeamFlex+ with PD-MRC (polarization diversity) ensures the T710 listens in all polarizations simultaneously. This results in significant receive signal gain from mobile devices with weak transmitters.

MULTI-USER MIMO (MU-MIMO)

802.11ac MU-MIMO allows the ZoneFlex T710 to transmit multiple spatial streams to multiple client devices simultaneously, increasing the total throughput and capacity of the wireless network. The ZoneFlex T710 is able to provide up to three clients each their own dedicated full-bandwidth channel using an MU-MIMO technique known as spatial reuse. This capability enables several benefits.

Efficient use of available spectrum effectively multiplies the total capacity of a network, allowing it to meet the increasing data demand driven by the proliferation of mobile Wi-Fi clients and data-hungry applications and uses such as high-definition video streaming. Additionally, MU-MIMO does not require client devices to time-share connections with other clients on the network as in legacy Wi-Fi, which means each device experiences less wait time and makes the network more responsive overall. Even legacy clients benefit from MU-MIMO because of the increased RF efficiency; more capacity remains to support non-Wave 2 clients.

ADVANCED WLAN APPLICATIONS

When used with the Ruckus Smart WLAN management systems, the ZoneFlex T710 supports a wide range of value-added applications such as guest networking, Dynamic PSK, hotspot authentication, wireless intrusion prevention and many more. WLANs can also be grouped and shared by specific APs. In a centrally managed configuration, the ZoneFlex T710 works with various authentication servers including AD, LDAP, and RADIUS.

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PHYSICAL CHARACTERISTICS

Power	• AC Input: 100-250 Vac, 50/60 Hz • PoE: 802.3at
Physical Size	• 31.7 cm (L), 24.1 cm (W), 9.5 cm (H)
Weight	• 6.5 lbs
RF	• Adaptive antenna array: 4,000+ unique antenna patterns, polarization diversity • Maximum Transmit Power: 28 dBm on 2.4 GHz; 28 dBm on 5 GHz • Physical antenna gain: Omni - 3 dBi (2.4 and 5GHz); Sector - 6dBi (2.4GHz), 8 dBi (5GHz) • BeamFlex SINR Tx gain: up to 6 dB • BeamFlex SINR Rx gain: up to 3-5 dB • Interference mitigation: up to 15 dB • Minimum Rx sensitivity: -104 dBm
Ethernet Ports	• 2 Ethernet ports, auto MDX, auto-sensing, 10/100/1000 Mbps, RJ-45 • Power over Ethernet (802.3at) with Category 5/5e/6 cable • Power over Ethernet (802.3at) Output with Category 5/5e/6 cable • Link Aggregation (LACP) • SFP port to support fiber backhaul
Environmental Conditions	• Operating Temperature:-40°F (-40°C) to 149°F (65°C) • Operating Humidity: up to 95% non-condensing
Power Consumption	• When PoE Out is not used - • 5.5W (minimum) • 10.4W (typical) • 25W peak

PERFORMANCE AND CAPACITY

Phy Data Rates	• Up to 800 Mbps (2.4GHz) • Up to 1733 Mbps (5GHz)
Concurrent Stations	• Up to 512
Number Of Simultaneous Voip Clients	• Up to 30

NETWORK ARCHITECTURE

IP	• IPv4, IPv6, dual-stack
Vlans	• 802.1Q (1 per BSSID or dynamic, per user based on RADIUS) • Port-based
802.1X For Wired Ports	• Authenticator • Supplicant
Tunneling	• L2TP

MULTIMEDIA AND QUALITY OF SERVICE

802.11E/Wmm	• Supported
Software Queues	• Per WLAN priority (2), Per traffic type (4), per client
Traffic Classification	• Automatic, heuristics and TOS based or VLAN-defined
Rate Limiting	• Dynamic per-user or per-WLAN

MANAGEMENT

Deployment Options	• Standalone (individually managed) • Centrally managed

Wi-FI

Standards	• IEEE 802.11a/b/g/n/ac
Supported Data Rates	• 802.11ac: 29.3 Mbps – 1733 Mbps (80MHz) • 802.11n: 6.5 Mbps – 216.7 Mbps(20MHz) 13.5 Mbps – 800 Mbps (40MHz) • 802.11a: 54, 48, 36, 24, 18, 12, 9 and 6 Mbps • 802.11b: 11, 5.5, 2 and 1 Mbps • 802.11g: 54, 48, 36, 24, 18, 12, 9 and 6 Mbps
Radio Chains/ Streams	• 4x4:4
MIMO	• SU-MIMO — Up to 4 streams • MU-MIMO — Up to 3 streams
Channelization	• 20 MHz, 40 MHz, and/or 80 MHz
Frequency Bands	• IEEE 802.11ac: 5.15 – 5.85 GHz • IEEE 802.11a/n: 5.15 – 5.85 GHz • IEEE 802.11b: 2.4 – 2.484 GHz
BSSIDs	• Up to 16 (2.4 GHz) • Up to 16 (5 GHz)
Power Save	• Supported
Certifications[4]	• WEEE/RoHS compliance • EN 60601-1-2 Medical • Wi-Fi Alliance certified • UL 2043 plenum rated
Subway And Railroad Certifications	• EN50121-1 EMC • EN50121-4 Immunity • IEC 61373 Shock & Vibration

*Wi-Fi Alliance certification in process

1 Max power varies by country setting, band, and MCS rate
2 BeamFlex+ gains are statistical system-level effects (including TxBF), translated to enhanced SINR here, and based on observations over time in real-world conditions with multiple APs and many clients
3 Rx sensitivity varies by band, channel width, and MCS rate
4 Refer to price list for current country certifications

MODEL	DESCRIPTION
ZoneFlex T710 Dual band 802.11ac Wave 2 Access Point	
9U1-T710-XX01	ZoneFlex dual band 802.11ac Outdoor Wireless Access Point, 4x4:4 streams, omnidirectional Beamflex+ coverage, dual 10/100/1000 Ethernet ports, 90-264 Vac, POE in and POE out, Fiber SFP, GPS, IP-67 outdoor enclosure. Does not include power adapter.
9U1-T710-XX51	ZoneFlex dual band 802.11ac Outdoor Wireless Access Point, 4x4:4 Streams, 120 degree sector Beamflex+ coverage, dual 10/100/1000 Ethernet ports, 90-264 Vac, POE in and POE out, Fiber SFP, GPS, IP-67 Outdoor enclosure. Does not include power adapter.
Optional Accessories	
902-0180-XX00	Spare of Power over Ethernet (PoE) Injector (10/100/1000 Mbps) quantiy of 1 unit (T710-series, 7762-series, 7782-series, 8800-S access points), US Plug
902-0202-0000	EPON Optical Network Terminal, SFP Optic Module, 20km reach, single mode, SC/UPC,-40 to 85C, Includes SC/UPC fiber patch cable
902-0203-0000	1000Base-LX, SFP (mini-GBIC) Optic Module, Single Mode, 10km reach, LC duplex, -40 to 85C. Includes LC-Duplex fiber patch cable
902-0183-0000	Spare Data Connector for T300-series, 7782-series, 8800; contains 1 weatherizing data cable gland
902-0185-0000	Spare Weatherized AC Connector for 7762-AC, 7782-series, and 8800; contains 4-pin AC connector

PLEASE NOTE: When ordering ZoneFlex 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

Warranty: Sold with a limited one year warranty.

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Ruckus™ Simply Better Wireless.

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