ZYXEL

NWA5123-AC HD

802.11ac Wave 2 Dual-Radio Unified Access Point

The Zyxel NWA5123-AC HD is a Wave 2 dual-radio 3x3 MU-MIMO Unified Access Point with a combined data rate of up to 1.6Gbps. Thanks to its superior hardware design with next generation beamforming technology and advanced noise suppression, the NWA5123-AC HD delivers increased coverage and improved connection speeds for every client. The high-performance NWA5123-AC HD is future-proof for the ever-growing mobility demands in high-density environments such as campuses and hotels.

Benefits

Second Generation MU-MIMO – the true breakthrough in wireless connectivity

Stepping up from 802.11ac, the Wave 2 technology introduces Multi-User MIMO (MU-MIMO). This is an important WiFi development that enables an AP to communicate with multiple clients at a time offering up to 300% performance for a 3x3 AP. The benefits of Wave 2 technology are clear, but there are still two well-known technical challenges: the airtime cost when performing channel measurement, and the data rate being limited by the slowest client in the MU group.

To overcome those challenges, the NWA5123-AC HD uses second generation transmit beamforming technology incorporating Low End Sensitivity Improvements and Time Domain Channel Smoothing allowing data rates to increase for not only MU-MIMO clients, but for all existing ones as well. Additionally, the NWA5123-AC HD is built with a high-efficiency antenna module, premium power amplifiers and low-noise elements delivering superior wireless performance over other Wave 2 access points on the market.

- Excellent wireless coverage and performance with the latest 3x3 Wave 2 802.11ac technology
- Next generation beamforming technology delivers maximum coverage
- Innovative MU-MIMO technology increases downstream throughput by simultaneously talking to multiple devices at the same time
- Simple installation with APFlex™ or Zyxel Utility makes installation and setup a breeze whether for just single or multiple units at once
- Solid state capacitors and advanced heat dissipation ensure high reliability and long life—even in the toughest environments
- Advanced Cellular Coexistence minimizes interference from 3G/4G cellular networks

Zyxel one network
Redefining network integration

Unbeatable coverage

Maximizing wireless coverage is more than just a game of output power. Every hardware design details including the layout, the antenna and the ability to distinguish between numerous sources of noise all contribute in determining coverage and throughput. Unlike most products on the market that measure only conducted sensitivity without considering the effect of antennas, Zyxel examines sensitivity with antenna (a.k.a. OTA sensitivity) as a whole wireless system to minimize the degradation in sensitivity at receiver end. In short, Zyxel has optimized the design of the NWA5123-AC HD to boost sensitivity and maximize real world performance.

ThermoSense Adjustment Technology

Zyxel's ThermoSense Adjustment Technology is an innovative feature that extends the operating temperature range to as high as to 60°C. It does this by monitoring the temperature threshold intelligently and making adjustments to operating parameters. This ensures continued performance in extreme environments such as warehouses and factory floors.

3G/4G Cellular Network Coexistence

With gradually pervasive 3G infrastructure deployment at customer sites, users start to experience wireless performance degrade e.g. ping drops and high latency, however whenever users shutdown the 3G equipment, wireless service resumes working smooth. To enable 3G/4G cellular network coexistence and minimize interference from 3G/4G antennas or signal boosters, the NWA5123-AC HD has built-in 3G/4G interference filters. As a result, installation of the AP no longer needs to worry about the visible or invisible 3G/4G indoor antennas around.

Zyxel One Network experience

Aimed at minimizing the repetitive task of deploying and managing networks, Zyxel One Network (ZON) simplifies configuration, management and troubleshooting of multiple AP and switch deployments. This enables users to focus on their other key business priorities. The Zyxel One Network incorporates Zyxel One Network Utility (ZON Utility), an easy-to-use tool designed for instant network setup and Zyxel Smart Connect, which allows Zyxel networking equipment to find and recognize each other automatically. Zyxel One Network further facilitates remote network maintenance with one-click functions, and works across multiple networking products from Switch to Wireless to Gateway.

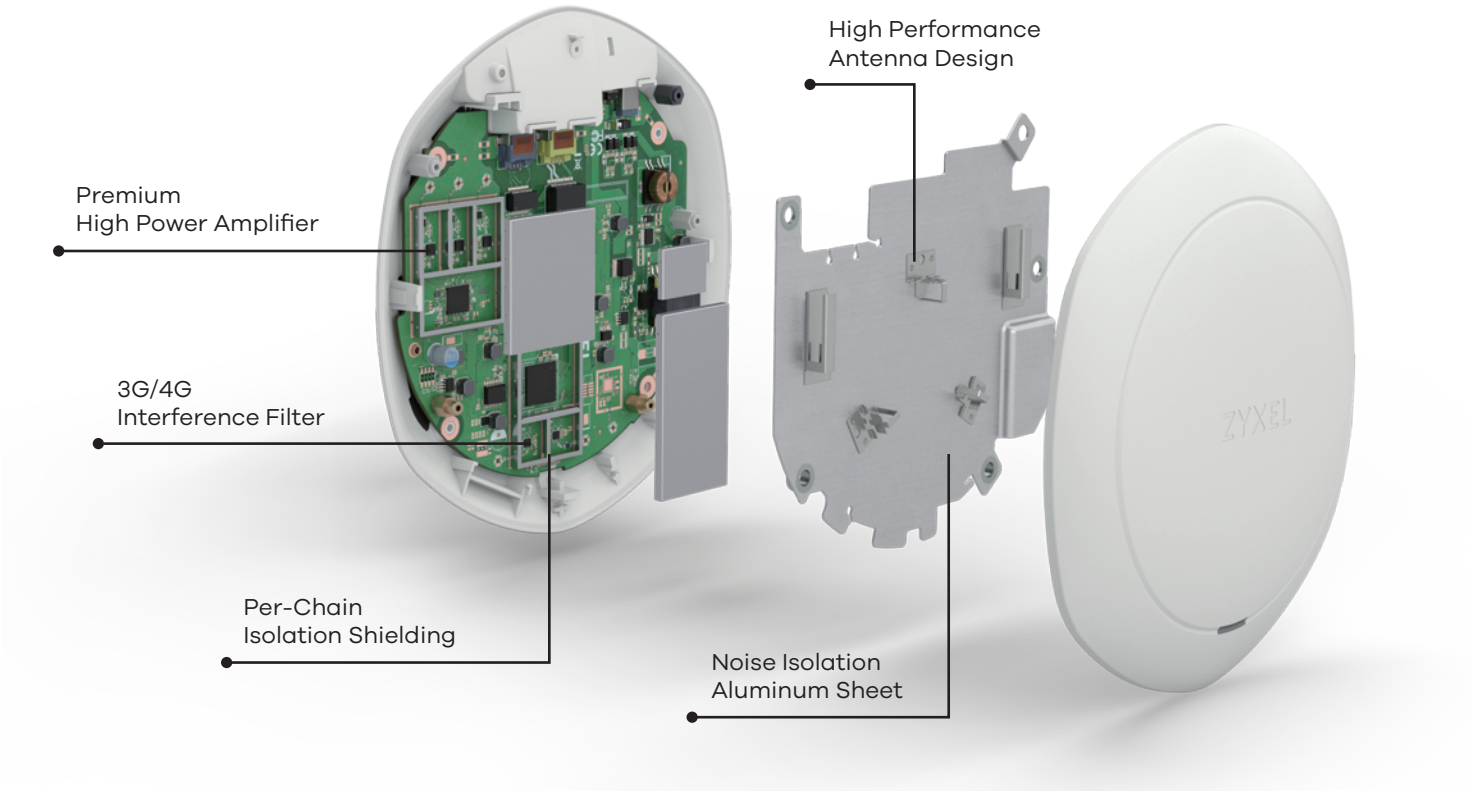
Optimized wireless experience with advanced features

The NWA5123-AC HD ensures an optimized wireless experience for users with a range of wireless features such as Dynamic Channel Selection (DCS), Load Balancing and Smart Client Steering. DCS minimizes the interference of co-channel and overlapping channels. Load Balancing enables administrators to set limits on the number of clients associated with each AP. Furthermore, Smart Client Steering features with Band Select, Signal Threshold and Band Balancing combine to deliver stable, reliable wireless connections. Band Select and Signal Threshold monitor the capabilities of each wireless client and steer them to the less-congested band and AP with better signals. Band Balancing detects dual-radio clients and distributes clients across 2.4 GHz and 5 GHz bands on AP. All of these deliver a smooth, consistent and uninterrupted wireless experience to its users.

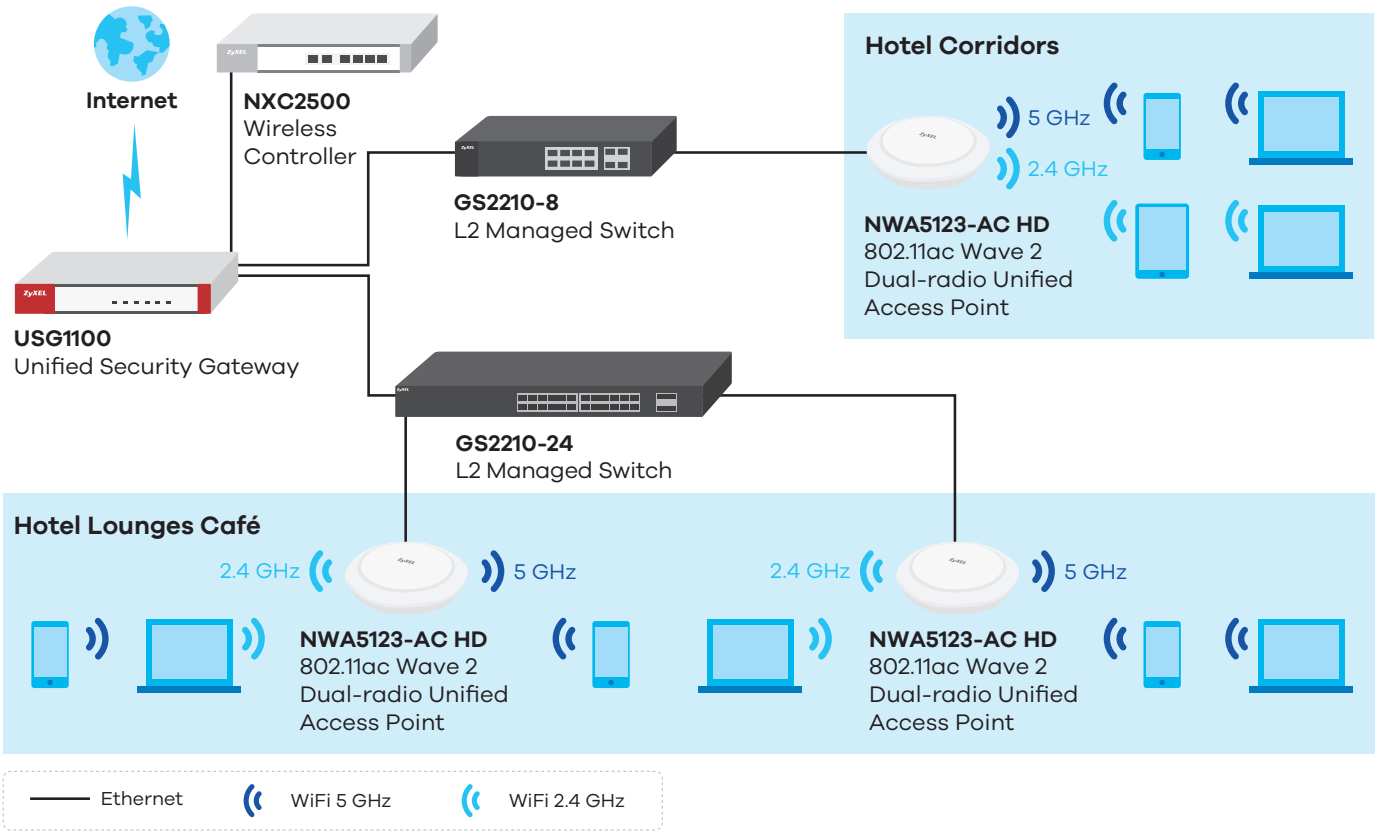
Grow your business with a scalable wireless network

The NWA5123-AC HD can be configured as a fully functional standalone AP. However, it is also capable of working with a Wireless LAN Controller to form a robust controller-based WLAN solution with centralized management as WiFi demand grows. Thanks to the innovative APFlex™ technology, no manual configuration is required to choose between standalone or controller mode; the NWA5123-AC HD will automatically put itself into managed mode if a Zyxel wireless controller is found on the network. Using industry standard CAPWAP technology ensures secure and reliable communication between the controller and AP, even if the controller is located off-site.

Powerful Hardware Design



Application Diagram



*NWA5123-AC HD will support repeater mode and ZyMesh in further features enhancement.

Specifications

Model		NWA5123-AC HD	
Product name		802.11ac Wave 2 Unified Access Point 	
Main Design			
Wireless frequency		2.4 GHz & 5 GHz	
Radio		2	
RF Specifications			
Frequency band		2.4 GHz (IEEE 802.11 b/g/n) • USA (FCC): 2.412 to 2.462 GHz • Europe (ETSI): 2.412 to 2.472 GHz • Taiwan (TW): 2.412 to 2.462 GHz	5 GHz (IEEE 802.11 a/n/ac) • USA (FCC): 5.15 to 5.25 GHz; 5.725 to 5.850 GHz • European (ETSI): 5.15 to 5.35 GHz; 5.470 to 5.725 GHz • Taiwan (TW): 5.15 to 5.25 GHz; 5.25 to 5.35 GHz; 5.475 to 5.725 GHz; 5.725 to 5.850 GHz
802.11n/ac premium features		• 802.11n: 2x2 MIMO with two spatial stream (SU-MIMO) • 802.11ac: 3x3 MIMO with three spatial stream (SU-, or MU-MIMO) • 802.11ac beamforming (transmit beamforming) • Maximal ratio combining (MRC) • Low End Sensitivity Improvements (LESI) • Time Domain Channel Smoothing • 20-, 40- and 80-MHz channels • PHY data rates total up to 300 Mbps (11n) + 1300 Mbps (11ac) • Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx) • Cyclic Delay diversity (CSD) support • Maximum Likelihood Demodulation (MLD) support • Low Density Parity Check (LDPC) support	
Typical transmit output power (dBm)*1	**US (FCC) 2.4 GHz**	25 dBm	
	US (FCC) 5 GHz	28 dBm	
	EU (ETSI) 2.4 GHz	20 dBm	
	EU (ETSI) 5 GHz	26 dBm	
Number of antenna	**2.4 GHz**	2x2 MIMO	
	5 GHz	3x3 MIMO	
Antenna gain	**2.4 GHz**	3 dBi	
	5 GHz	3 dBi	
Support data rate		• 802.11a/g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps • 802.11n: up to 300 Mbps in MCS15 (40MHz; 2 Spatial Streams; GI=400ns) • 802.11ac:up to 1300 Mbps in MCS9 (80MHz; 3 Spatial Streams; GI=400ns)	
Conducted sensitivity		Min. Rx sensitivity up to -103 dBm	
Over-the-Air (OTA) sensitivity*2		Min. Rx sensitivity up to -103 dBm	
Interfaces			
Number of 10/100/1000M LAN		2 x switch ports	
Console port		4-Pin serial	
Input power requirements		Direct DC power or Power over Ethernet (PoE)*3	
PoE		802.3at 802.3af (Restrict 2.4G & 5G radio to one transmit stream only.)	
PoE power draw		15.5 W (802.3at PoE)	

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WLAN Features	
WLAN maximum throughput	Up to 1600 Mbps
Mesh AP (By License)	Future Support
Mesh AP for multiple SSID with VLAN (through tunnel mode)	Future Support
Fast roaming	Pre-authentication and PMK caching
Wireless Security	
WEP	Yes
WPA/WPA2-PSK	Yes
WPA/WPA2-Enterprise	Yes
WLAN access control list	Yes
EAP type	EAP-TLS, EAP-TTLS, EAP-PEAP, EAP-FAST, EAP-AKA and EAP-SIM
IEEE 802.1X	Yes
Number of SSID	16
Web authentication*4	Yes
MAC filtering	Yes
Layer-2 Isolation	Yes
RADIUS authentication	Yes
Microsoft AD authentication*4	Yes
LDAP authentication*4	Yes
MAC authentication*4	Yes
Rogue AP detection	Yes
Network	
IPv6 host	Yes
VLANs	Yes
DHCP client	Yes
QoS and Power Save	
WMM	Yes
WMM power save	Yes
U-APSD	Yes
DiffServ marking	Yes
Management	
ZON Utility*5	• Discovery of Zyxel switches, APs and gateways • Centralized and batch configurations ▪ IP configuration ▪ IP renew ▪ Device factory reset ▪ Device reboot ▪ Device locating ▪ Web GUI access ▪ Firmware upgrade ▪ Password configuration ▪ One-click quick association with Zyxel AP Configurator (ZAC)
Smart Connect	• Neighbor device discovery • One-click remote management access to the neighboring Zyxel devices
Zyxel AP Configurator*6	• Batch AP configuration • Batch AP firmware upgrade • Batch AP profile backup
Zyxel Wireless Optimizer*7	• Wi-Fi AP planning • Wi-Fi coverage detection • Wireless health management
Standalone AP mode	Yes
Managed AP mode	Yes
Repeater AP mode	Future Support

Model		NWA5123-AC HD
CLI		Yes
SNMP		v2c/v3
Others		
Plenum rating		Yes
Kensington lock support		Yes
Power supply		Input: AC 100-240V, 50~60Hz Output: DC +12V 2A (Sold separately)
MTBF (hr)		4,134,738
Standard Compliance		
Ethernet		• IEEE 802.3 • IEEE 802.3u • IEEE 802.11ab • IEEE 802.3au • IEEE 802.3az • IEEE 802.3af/at
PoE		IEEE 802.3af/at
WLAN		• 802.11b: DBPSK, DQPSK, CCK • 802.11g: BPSK, QPSK, 16-QAM, 64-QAM • 802.11a: BPSK, QPSK, 16-QAM, 64-QAM • 802.11n: BPSK, QPSK, 16-QAM, 64-QAM • 802.11ac: BPSK, QPSK, 64-QAM, 256-QAM
Certifications		
Radio		FCC part 15C, FCC part 15E, ETSI EN 300 328, EN 301 893, LP0002, EN 60601-1-2
EMC		FCC Part 15B, EN 301 489-1, EN 301 489-17, EN55032, EN55024, EN61000-3-2/-3, BSMI CNS13438
Safety		EN 60950-1, IEC 60950-1 BSMI CNS14336-1
Physical Specifications		
Item	**Dimensions (WxDxH)(mm/in.)**	211 x 223 x 39/8.31 x 8.78 x 1.54
	Weight (g/lb.)	750/1.65
Packing	**Dimensions (WxDxH)(mm/in.)**	251 x 247 x 55/9.88 x 9.72 x 2.17
	Weight (g/lb.)	990/2.18
Included accessories		• Wall/ceiling mount plate • Mounting screws
Environmental Specifications		
Operating	**Temperature**	-20°C to 60°C/-4°F to 140°F
	Humidity	10% to 90% (non-condensing)
Storage	**Temperature**	-40°C to 70°C/-40°F to 158°F
	Humidity	10% to 90%

*1 Maximum output power is limited by regional regulatory.
*2 OTA sensitivity is measured through the Antenna represents real sensitivity in field application.
*3 When both power sources are available, DC power takes priority over PoE.
*4 Supports when working with Zyxel NXC controller.
*5 Support from ZON Utility V2.1 or above.
*6 Support from ZAC V1.1.3 or above.
*7 Support from ZWO V1.0.5 or above

For more product information, visit us on the web at www.zyxel.com

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