ZYXEL

NWA5120 Series
802.11n/ac Unified Access Point

The Zyxel NWA5120 Series 802.11n/ac Unified Access Point is a highly future-proof WLAN solution perfect for growing business, hospitality and education environments. With a 2-in-1 standalone/managed AP design, users can initially use it as a standalone AP, and convert it to a controller-managed AP when Wi-Fi demand grows. The Series is designed with industry-leading technology to provide trouble-free wireless quality to lower IT overhead. The embedded antennas and signal output are fine-tuned to provide easy RF planning and maximum signal coverage. It also supports such features as dynamic channel selection, load balancing and pre-authentication for superb Wi-Fi experience.

Benefits

Ceiling-mount design blends into environments

Different from traditional business routers, the slick "smoke detector" ceiling-mount design of Zyxel NWA5120 Series provides better coverage and performance. The NWA5120 Series is a PoE AP with a multifunction design that solves all problems by offering internal as well as external antennas to enhance wireless performance and to eliminate coverage dead spots. Moreover, the signal outputs have been fine-tuned to provide easy RF planning and excellent signal coverage especially for hospitality and education environments.

The Zyxel NWA5120 Series is constructed from non-toxic casing materials, making it safe to install in plenum areas, as it won't release hazardous vapor emissions in the event of a fire. This is life-critical issue, particularly when deploying in public venues such as offices, hotels, and schools.

- Ceiling- and wall-mount design with optimized RF performance

- 2-in-1 standalone/managed AP design

- CAPWAP management supported

- Enterprise class 2x2 802.11ac AP supports combined data rates of up to 1200 Mbps (NWA5123-AC)

- APFlex™ and Zyxel One Network utilities make deployment simple and fast

zyxelonenetwork
Redefining network integration

Zyxel one network experience

Aiming for relieving our customers from repetitive operations of deploying and managing a network, Zyxel one network is designed to simplify the configuration, management, and troubleshooting, allowing our customers to focus on the business priorities. Zyxel one network presents an easy-to-use tool, Zyxel one network utility (ZON utility), to realize speed network setup. Zyxel Smart Connect allows Zyxel networking equipment to be aware and recognize each other and further facilitating the network maintenance via one-click remote functions such as factory reset or power cycling. Zyxel one network redefines the network integration across multiple networking products from switch to Wi-Fi AP and to Gateway.

Effortless conversion from standalone to centrally-managed

The Zyxel NWA5120 Series Unified APs can be configured as a fully functional standalone AP and also capable to work with Wireless LAN Controller to form a robust controller-based WLAN solution with centralized management when Wi-Fi demand grows, as well as auto AP provisioning over both LAN and WAN connections. After being installed and powered on, the APs automatically look for the Wireless LAN Controller and establish connections. Utilizing the CAPWAP protocol, connections can be established between the controller and APs without needing to change the existing LAN infrastructure.
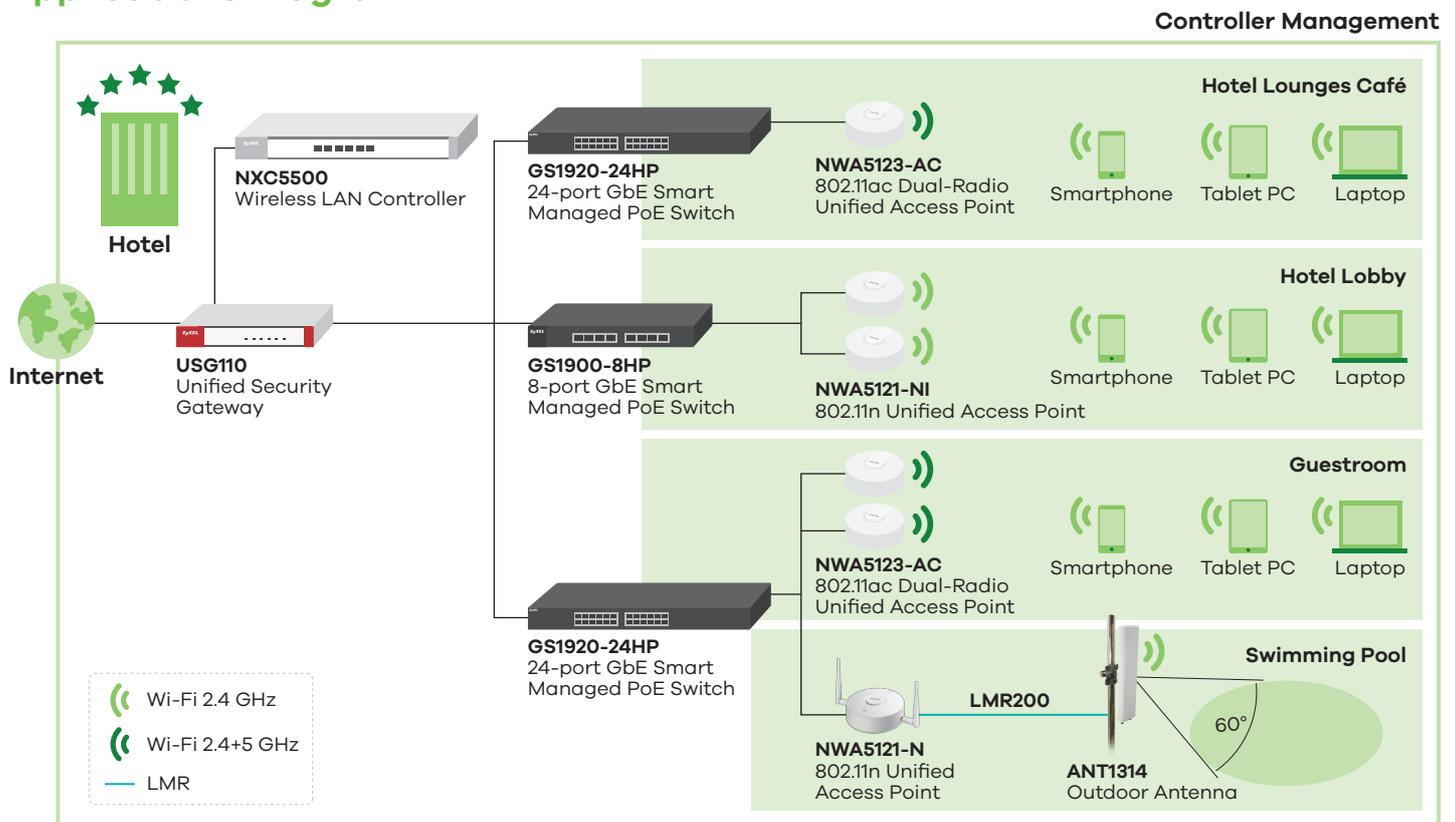
Ultra-fast Gigabit Wi-Fi experience

Featuring the latest 802.11ac standard, the NWA5123-AC not only provides data rates of up to 1200 Mbps, but also optimizes signal with its advanced antenna design to bring the best user experience through a higher number of parallel video data streams for minimized latency on the network. Additionally, the concurrent dual-band support enables NWA5123-AC to satisfy clients using both 2.4 GHz and 5 GHz at the same time and is perfect for high-density applications such as hospitality, education and business.

Streamlined deployments for optimized WLAN experience

The NWA5120 Series features APFlex™ to simplify managed/standalone AP mode configuration to integrate with network environments automatically and to eliminate the need for pre-install preparations. To deliver optimized wireless experience for users, the NWA5120 Series features Dynamic Channel Selection (DCS), Load Balancing and Smart Client Steering, etc. Dynamic Channel Selection (DCS) avoids interference from co-channel and channel overlapping at initialization, while Load Balancing enables administrators to set limits on the number of clients associated with each AP. Furthermore, Smart Client steering features Band Select, Signal Threshold and Band Balancing for 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 the AP with better signal. Band Balancing detects dual-radio clients and distributes clients across 2.4 GHz and 5 GHz bands on AP. These advanced functions ensure the NWA5120 Series to provide a smooth, consistent and uninterrupted wireless access experience.

Applications Diagram

Feature Highlights

Ultra-fast Speed

NWA5123-AC is the 2x2 802.11ac AP which provides Gigabit Wi-Fi experience. The concurrent dual-band support meets the incremental BYOD demands to support more clients with equal signal coverage in both 2.4 GHz and 5 GHz bands. There's no latency to transmit high bandwidth data such as video and voice streaming.

ZyMesh

Wireless Mesh is an array of access points automatically forming dynamic wireless links. Built on this foundation of mesh networking, ZyMesh is Zyxel's proprietary protocol for creating wireless mesh links for easy configuration, optimized management and enhanced reliability.

Zyxel AP Configurator

While deploying a number of APs, repetitive configuration of each unit takes time and effort. Zyxel AP Configurator (ZAC) builds templates that allow users to copy one profile to several APs, allowing batch firmware upgrades and profile backups in three easy steps to significantly reduce configuration time and effort.

Zyxel APFlex™

Zyxel APFlex™ includes Zero-touchAP mode changing and Automatic IP configuration functions. The Zero-touch AP mode setting detects if there is an existing Zyxel controller and to choose stand-alone or managed mode accordingly.

The Automatic IP configuration removes manual configuration and allows the AP to set itself to fixed or dynamic IP address automatically. With these two intelligent features, IT administrators can skip the two critical settings that had to be handled manually on legacy products and focus to more critical configuration tasks instead.

WPA2 Enterprise

NWA5120 series features with industrial strength WPA2 enterprise protection and supports a wide range of Extensible Authentication Protocol (EAP) types. It can be seamlessly integrated with deployed corporate RADIUS servers.

Wireless Layer-2 Isolation

The Layer-2 isolation protects private networks among client users, allowing users to access their shared devices without entering the rest of a private network for enhanced security. In addition, the intra-BSS blocking prevents different Wi-Fi clients associated with the same AP from seeing each other and each other's data.

Zyxel One Network Utility

To streamline the management process, the NWA5120 series comes with the Zyxel one network (ZON) utility, allowing administrators to assign IP addresses to multiple APs through just one platform.

Administrators can avoid the hassle logging into each AP to change the default IP addresses before physical installation.

Zyxel Wireless Optimizer

Zyxel Wireless Optimizer (ZWO) provides a powerful tool for centralized management covering initial planning, adjustment during deployment and after-sale maintenance of an AP network. Architects can simulate AP deployment on a map displaying the number of APs needed. During deployment, ZWO will also map actual signal coverage for architects to adjust their AP locations or configurations. After-sale, network administrators can access key performance details from ZWO, including channel in use, transmit retry rate and frame error rate, as well as the devices on the environment map. ZWO's user-friendly presentation saves time and facilitates quick response to the network problems.

Specifications

Model	NWA5121-NI	NWA5121-N	NWA5123-AC
Product name	802.11n Unified Access Point	802.11n Unified Access Point	802.11ac Dual-Radio Unified Access Point

Main Design			
Wireless frequency	2.4 GHz	2.4 GHz	2.4 GHz & 5 GHz
Radio	1	1	2
Antenna	Embedded 2x2 7 dBi antenna	2 external 3 dBi dipole antenna	Embedded 2x2 3 dBi/4 dBi antenna

RF Specifications				
Frequency band	**2.4 GHz (11 g/n)**	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 (11 a/n)	-	-	5 GHz (IEEE 802.11 a/n/ac)
				• USA (FCC):
				  5.15 to 5.35 GHz; 5.725 to 5.850 GHz
				• Europe (ETSI):
				  5.15 to 5.35 GHz; 5.470 to 5.725 GHz
				• Taiwan (TW):
				  5.15 to 5.35 GHz; 5.725 to 5.850 GHz

Conducted typical transmit output power	**US (FCC) 2.4 GHz**	20 dBm, 2 antennas	20 dBm, 2 antennas	23 dBm, 2 antennas
	US (FCC) 5 GHz	-	-	26 dBm, 2 antennas
	EU (ETSI) 2.4 GHz	17 dBm, 2 antennas	18 dBm, 2 antennas	20 dBm, 2 antennas
	EU (ETSI) 5 GHz	-	-	26 dBm, 2 antennas
Received sensitivity		2.4 GHz: • 802.11b/g, min. up to -95 dBm • 802.11n/20 MHz, min. up to -93 dBm • 802.11n/40 MHz, min. up to -92 dBm		2.4 GHz: • 802.11b/g, min. up to -99 dBm • 802.11n/20 MHz, min. up to -93 dBm • 802.11n/40 MHz, min. up to -88 5 GHz: • 802.11a, min. up to -95 dBm • 802.11n/20 MHz, min. up to -94 dBm • 802.11n/40 MHz, min. up to -92 dBm • 802.11ac/40 MHz, min. up to -92 dBm • 802.11ac/80 MHz, min. up to -89 dBm

LAN			
Number of 10/100/1000 Mbps LAN ports	1	1	1
PoE	Yes	Yes	Yes
PoE power draw	4 W	4 W	9 W

Model	NWA5121-NI	NWA5121-N	NWA5123-AC
WLAN Features			
Support data rate	• 802.11g: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps • 802.11b: 1, 2, 5.5 and 11 Mbps • 802.11n: up to 300 Mbps in MCS15 (40 MHz; GI=400 ns)	• 802.11g: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps • 802.11b: 1, 2, 5.5 and 11 Mbps • 802.11n: up to 300 Mbps in MCS15 (40 MHz; GI=400 ns)	• 802.11g: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps • 802.11b: 1, 2, 5.5 and 11 Mbps • 802.11n: up to 300 Mbps in MCS15 (40 MHz; GI=400 ns) • 802.11ac: up to 866 Mbps in MCS9 (80 MHz; 2 spatial streams; GI=400 ns)
WMM (Wi-Fi certified)	Yes	Yes	Yes (Compliance)
WEP	Yes	Yes	Yes
WPA/WPA2-PSK	Yes	Yes	Yes
WPA2 (Wi-Fi certified)	Yes	Yes	Yes
WPA/WPA2-Enterprise	Yes	Yes	Yes
Fast roaming	Pre-authentication and PMK caching		
IEEE 802.1X	Yes	Yes	Yes
Number of multiple SSID	8	8	16
MAC filtering	Yes	Yes	Yes
RADIUS authentication	Yes	Yes	Yes
EAP types	TLS, TTLS, PEAP, FAST, AKA and SIM		
Rogue AP detection	Yes	Yes	Yes
Network			
VLANs	Yes	Yes	Yes
DHCP client	Yes	Yes	Yes
QoS			
WMM	Yes	Yes	Yes
WMM power saving	Yes	Yes	Yes
Zyxel One Network			

ZON Utility	• Discovery of Zyxel switches, APs and gateways
	• Centralized and batch configurations
	  - IP configuration - IP renew - Device reboot
	  - Device factory reset - 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		
Management Features			
ZAC	• Batch AP configuration • Batch AP firmware upgrade • Batch AP profile backup		
CLI	Yes	Yes	Yes
Others			
Plenum rating	Yes	Yes	Yes
MTBF (hr)	627,152	627,152	1,241,824

Model	NWA5121-NI	NWA5121-N	NWA5123-AC
Standard Compliance			
Ethernet	IEEE 802.3, IEEE 802.3u	IEEE 802.3, IEEE 802.3u	IEEE 802.3, IEEE 802.3u
PoE	IEEE 802.3af	IEEE 802.3af	IEEE 802.3af
Radio modulation	IEEE 802.11 a/g (OFDM/DSSS) • 48/54 Mbps (QAM-64) • 24/36 Mbps (QAM-16) • 12/18 Mbps (QPSK) • 6/9 Mbps (BPSK) IEEE 802.11b (DSSS) • 5.5/11 Mbps (CCK) • 2 Mbps (DQPSK) • 1 Mbps (DBPSK) IEEE 802.11n (OFDM/DSSS) • QAM-64 • QAM-16 • QPSK • BPSK		IEEE 802.11a/g (OFDM/DSSS) • 48/54 Mbps (QAM-64) • 24/36 Mbps (QAM-16) • 12/18 Mbps (QPSK) • 6/9 Mbps (BPSK) IEEE 802.11b (DSSS) • 5.5/11 Mbps (CCK) • 2 Mbps (DQPSK) • 1 Mbps (DBPSK) IEEE 802.11n (OFDM/DSSS) • QAM-64 • QAM-16 • QPSK • BPSK IEEE 802.11ac (OFDM/DSSS) • 256-QAM • 64-QAM • QPSK • BPSK
Certification			
Radio	ETSI EN 300 328 V1.7.1: 11-2006 FCC Part 15.247 LP0002; EN 60601-1-2: 2007		ETSI EN 300 328 V1.7.1: 11-2006 EN 301 893 V1.5.1 FCC Part 15.247, FCC Part 15E LP0002; EN 60601-1-2: 2007
EMC	EN 301 489-1 V1.8.1: 04-2008 EN 301 489-17 V2.1.1: 05-2009 EN55022: 2010; EN55024: 2010; EN61000-3-2/-3 FCC Part 15.107; BSMI CNS13438.99; CNS14336: 99		EN 301 489-1 V1.8.1: 11-2008 EN 301 489-17 V2.1.1: 05-2009 EN55022: 2010, EN55024: 2010 EN61000-3-2/-3, FCC Part 15.107 BSMI CNS13438.99; CNS14336:99
Safety	EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011; IEC 60950-1: 2005; BSMI		
Power Requirement			
Power supply	12 V DC, 1 A	12 V DC, 1 A	12 V DC, 1 A
Physical Specifications			
Item — Dimensions (WxDxH)(mm/in.)	130 x 130 x 54.5/ 5.12 x 5.12 x 2.17	130 x 130 x 54.5/ 5.12 x 5.12 x 2.17	130 x 130 x 54.7/ 5.12 x 5.12 x 2.17
Item — Weight (kg/lb.)	0.23/0.51	0.23/0.51	0.30/0.67
Packing — Dimensions (WxDxH)(mm/in.)	282 x 207 x 71/ 11.10 x 8.15 x 2.80	282 x 207 x 71/ 11.10 x 8.15 x 2.80	278 x 209 x 72/ 10.94 x 8.23 x 2.83
Packing — Weight (kg/lb.)	0.61/1.34	0.61/1.34	0.70/1.54
Included accessories	• Power adapter • Wall/Ceiling-mount plate		
Environmental Specifications			
Operating environment — Temperature	0°C to 50°C/32°F to 122°F		
Operating environment — Humidity	10% to 90% (non-condensing)		
Storage environment — Temperature	-30°C to 70°C/-22°F to 158°F		
Storage environment — Humidity	10% to 90%		

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

Datasheet NWA5120 Series

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