ZYXEL

NWA1123-AC HD
802.11ac Wave 2 Dual-Radio PoE Access Point

Introducing the new hybrid access point

The Zyxel Hybrid series allows devices like the NWA1123-AC HD to be used in two modes by utilizing Zyxel's NebulaFlex, you are able to easily switch between standalone and our License Free Nebula cloud management platform, anytime, with a few simple clicks.

By allowing the two different modes, you are able to protect your investment in wireless technology by having the flexibility to benefit from the cloud in your own time, without the need to worry about additional ongoing licensing costs.

When used with Nebula you are able to centrally manage, access real-time network information and gain effortless control over the NWA1123-AC HD and other Hybrid and Nebula devices, all under a single intuitive platform without the need to install any software or add additional equipment like a controller.

Not ready for the cloud... Just yet?

For those of you who are not ready for the cloud the NWA1123-AC HD offers a standalone mode, allowing you to setup each AP via its local user-friendly web interface and setup wizard. The wizard will quickly guide you through the initial setup and have you up running in minutes. Additionally you can manage and monitor the AP via traditional SNMP methods that you may have already in place. The NWA1123-AC HD is also part of the Zyxel One Network. This means that you can use the complimentary Zyxel One Network Utility to help with repetitive operations during deployment.

NebulaFlex gives you the flexibility to switch between standalone and our License Free Nebula cloud management

Nebula cloud management allows easy deployment, real-time configurations and access to all your access points anytime with

Achieve reliable connectivity, support for more connected clients and better wireless coverage with the latest Wave 2 WiFi standard

Up to 300% more performance from MU-MIMO technology

Robust build quality including solid-state capacitors and advanced heat dissipation design to ensure long life and operational reliability

Protect against 3G/4G cellular network interference with our advanced cellular mitigation design

nebula

Zyxel one network
Redefining network integration

What to benefit from Cloud central management?

When you're ready to join our Nebula cloud management solution, simply register your NWA1123-AC HD* via Nebula Control Center and the device will automatically join, auto provision and begin to give real-time information. The intuitive platform allows you to group your access points together, control centrally, gain access to diagnostics tools and additional features like captive portal all under a single platform.

The Nebula platform has no limits to how many access points can be added, giving you an easy to use, scalable platform that you can access anytime, anywhere.
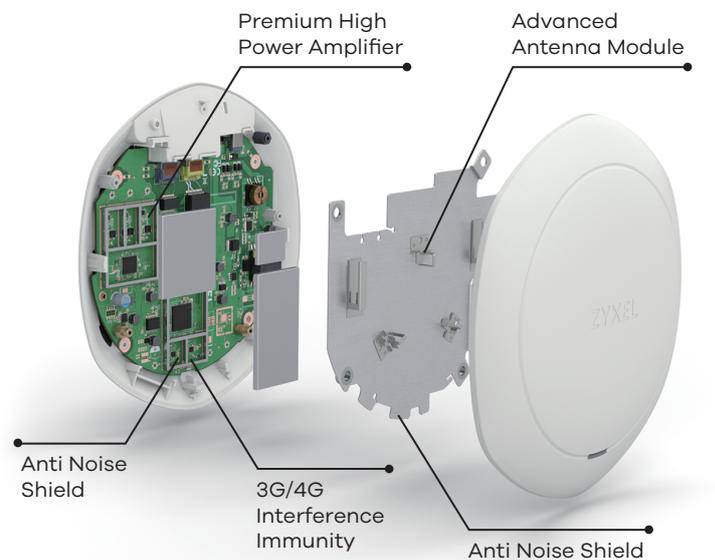
*: Requires 5.20 version of firmware

RF First – high performance and reliable connections through design

With Zyxel's commitment to "RF First" for high performance and reliable connections through design, the NWA1123-AC HD delivers increased coverage and improved connection speeds for every client.

Built on over 15 years of experience in innovating business class wireless solutions, our access points are designed and crafted by selecting high quality components. Every hardware design detail including the layout, the antenna and the ability to distinguish between numerous sources of noise all contribute in determining coverage and throughput.

Zyxel examines sensitivity combined with the antenna (OTA sensitivity) as a whole wireless system to minimize the degradation in sensitivity (desense) at the receiver end. This combined with fine-tuning all the elements ensures that we always lead with user experience.

Premium High Power Amplifier

Advanced Antenna Module

Anti Noise Shield

3G/4G Interference Immunity

Anti Noise Shield

Gain a better overall networking experience with Wave 2

Progressing from the highly successful 802.11ac standard, the second-generation 802.11ac Wave 2 WiFi standard introduces Multi-User MIMO (MU-MIMO). This important development in WiFi enables an AP to communicate with multiple clients at the same time offering up to 300% improvement in performance when used with supported client devices.

Before
MU-MIMO

MU-MIMO

Breakthrough in wireless connectivity

To achieve reliable connectivity with greater support for more connected clients, the NWA1123-AC HD uses 2nd Generation Transmit Beamforming (TxBF) technology. This gives the ability to increase overall data rates (Transmission rates), which benefits not only MU-MIMO client devices, but also all older generation client devices.

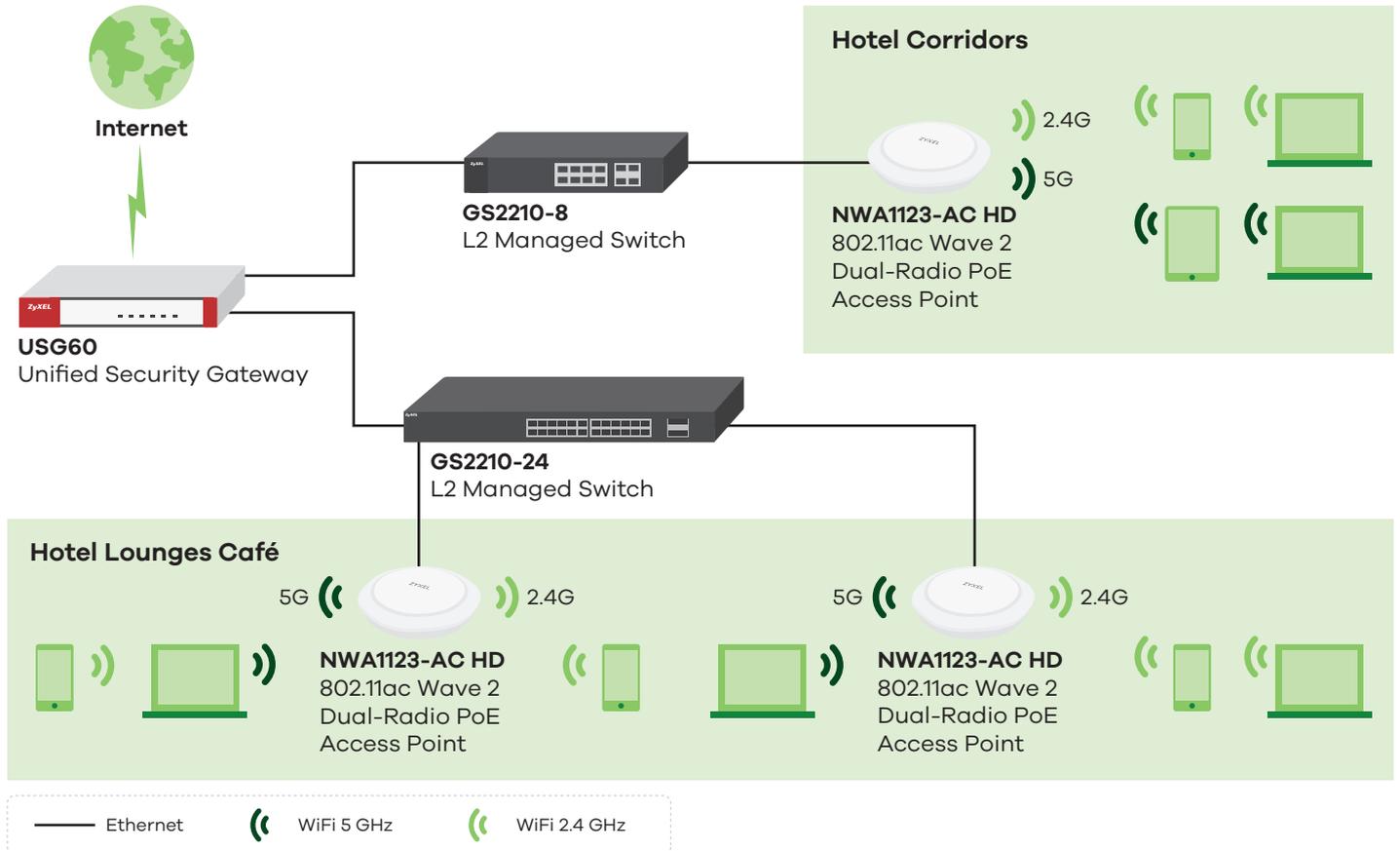## 3G/4G cellular network coexistence

With gradually pervasive 3G infrastructure deployment at customer sites, users start to experience adverse effects on their wireless performance e.g. high latency or ping drops. To allow the co-existence of 3G/4G cellular network and minimize interference from 3G/4G antennas or signal boosters, the NWA1123-AC HD has been designed to include built-in 3G/4G interference filters to allow it continue operating with optimal performance when this type of interference exists.

Wireless built for user experience

The NWA1123-AC HD ensures an optimized wireless experience for users by combining wireless technologies like 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 combined together 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 for users.

Application Diagram

Specifications

Model	NWA1123-AC HD
Product name	802.11ac Wave 2 Dual-Radio PoE 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):
		  5.150 to 5.250 GHz; 5.250 to 5.350 GHz;
		  5.470 to 5.725 GHz; 5.725 to 5.850 GHz
		• European (ETSI):
		  5.150 to 5.350 GHz; 5.470 to 5.725 GHz
		• Taiwan (TW):
		  5.150 to 5.250 GHz; 5.250 to 5.350 GHz;
		  5.470 to 5.725 GHz; 5.725 to 5.850 GHz

802.11n/ac premium features	• 2.4 GHz: 2x2 MIMO with two spatial stream (SU-MIMO) • 5 GHz: 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 (40 MHz; 2 Spatial Streams; GI=400 ns) • 802.11ac: up to 1300 Mbps in MCS9 (80 MHz; 3 Spatial Streams; GI=400 ns)	
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 (Full mode) 802.3af (Restrict 2.4G & 5G radio to one transmit stream only.)
PoE power draw	15.5W (802.3at PoE)

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
MAC filtering	Yes
Layer-2 Isolation	Yes
RADIUS authentication	Yes
Rogue AP detection[7]	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[7]	Yes
Management	
ZON Utility[4]	• Discovery of Zyxel switches, APs and gateways • Centralized and batch configurations ▪ IP configuration ▪ Password configuration ▪ Device reboot ▪ Device factory reset ▪ Firmware upgrade ▪ Web GUI access ▪ IP renew ▪ One-click quick association with Zyxel AP Configurator (ZAC) ▪ Device locating
Smart Connect	• Neighbor device discovery • One-click remote management access to the neighboring Zyxel devices
Zyxel AP Configurator[7]	• Batch AP configuration • Batch AP firmware upgrade • Batch AP profile backup
Zyxel Wireless Optimizer[6]	• WiFi AP planning • WiFi coverage detection • Wireless health management
Standalone AP mode	Yes
Repeater AP mode	Future support
CLI	Yes
SNMP	v2c/v3
Others	
Plenum rating	Yes
Kensington lock support	Yes
Power supply	• Input: AC 100 - 240V, 50 - 60 Hz • Output: DC +12V 2A
MTBF (hr)	1,306,790

Standard Compliance

Ethernet	• IEEE 802.3 • IEEE 802.3u • IEEE 802.11ab • IEEE 802.3au • IEEE 802.3az
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.)**	266 x 268 x 56/10.47 x 10.55 x 2.21
	Weight (g/lb.)	1090/2.40
Included accessories		• Wall/ceiling mount plate • 12V 2A adapter • Mounting screws

Environmental Specifications

Operating environment	**Temperature**	–20°C to 50°C/-4°F to 122°F
	Humidity	10% to 90% (non-condensing)
Storage environment	**Temperature**	–40°C to 70°C/-40°F to 158°F
	Humidity	10% to 90% (non-condensing)

*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: Support from ZON Utility V2.1 or above.
*5: Support from ZAC V1.1.3 or above.
*6: Support from ZWO V1.0.5 or above.
*7: Support only in standalone mode.

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

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Datasheet NWA1123-AC HD