



NWA110BE

BE6500 WiFi 7 Dual-Radio NebulaFlex Access Point

Meet the NWA110BE: a high-performance access point with BandFlex radio design that harnesses the full power of WiFi 7. It combines easy setup and flexibility to future-proof your small/home business networks.

The BE6500 (2.4GHz: 2x2:2, 5 or 6GHz: 4x4:2) dual-radio access point offers blazingly fast WiFi 7 speeds of up to 6.5Gbps, ensuring lower latency for real-time responsiveness.

With two additional antennas in the 5GHz/6GHz bands compared to other dual-radio (2x2+2x2) AP models on the market, it extends coverage range further and boosts performance.

Its flexible BandFlex radio can support either 5GHz or 6GHz by configuration, making it the most economical choice to fit into your existing 5GHz coverage as well as futureproofing the use of 6GHz.

Coupled with Zyxel Nebula's extensive suite of management and security innovations, it guarantees robust connectivity and reliability for today's modern office demands.

The NWA110BE, equipped with NebulaFlex technology, offers users complete flexibility to seamlessly switch between standalone mode or the intuitive Nebula cloud-managed mode as needed.

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BandFlex design supports either 5GHz or 6GHz by configuration, fitting seamlessly into existing 5GHz coverage while futureproofing for 6GHz



The advanced RF filter prevents interference between the 5GHz and 6GHz bands while guaranteeing performance in all channels



Can be powered by PoE at (PoE+) or USB Type C charger to offer flexible powering options



NebulaFlex allows users to switch between standalone or intuitive Nebula cloud managed modes as needed



Benefits

Bringing next generation WiFi within reach

WiFi 7, also known as IEEE 802.11be, represents the next evolution in WiFi standards, supporting all three frequency bands – 2.4GHz, 5GHz, and 6GHz. With its revolutionary technological advancements, it promises to redefine the concept of speed, delivering unprecedented rates to elevate online experiences in the digital realm.

Coupled with Zyxel's comprehensive range of management and security innovations, the NWA110BE ensures the utmost connectivity and reliability for demanding enterprise-grade connectivity.

MLO: Transforming WiFi 7 for unprecedented connectivity

Fundamentally, one of the most pioneering advancements of WiFi 7 is the introduction of MLO (Multiple Link Operation). MLO represents a WiFi technology that empowers devices linked to a WiFi access point (AP) to concurrently transmit and/or receive data through various frequency bands and channels. This entails simultaneous connections across the 2.4GHz, 5GHz, and 6GHz bands, a capability absent in earlier WiFi generations where devices were restricted to a solitary WiFi band connection.

The result is a significant amplification in data throughput, a reduction in latency, and an enhancement in reliability. These outcomes undeniably enhance the user experience and unveil novel opportunities for emerging applications such as VR/AR, online gaming, remote office setups, and cloud computing.

RF first by design

The advanced RF filter design eliminates interference between the 5GHz and 6GHz bands, while the built-in 4G/5G interference filter allows seamless coexistence with 4G/5G cellular networks and minimizes interference, all of which guarantees a seamless WiFi experience without interruptions.

Additionally, 4K QAM (MCS-13) requires a good Signal-to-Noise Ratio (SNR). The rectangular design helps maintain excellent isolation between antennas, meeting this requirement more effectively than a circular design.

NebulaFlex – simply manage it your way!

NebulaFlex offers extended flexibility, enabling users to effortlessly switch between standalone mode and our intuitive cloud-managed NCC (Nebula Control Center) modes at any time, without incurring additional costs. This ensures adaptability to changing needs while safeguarding investments in wireless technology.

Nebula, the intelligent cloud management

Nebula offers comprehensive monitoring and reporting capabilities, including real-time notifications for critical events via email or the mobile app. With Nebula, you can enjoy a streamlined experience for network installation and management without the need for additional costs for software or hardware controllers.

• Enhance your WiFi with Nebula

Nebula automates wireless network management and optimization with features like WiFi Aid and Wireless Health, ensuring the best possible user experience. These features enhance network performance and reliability, delivering an exceptional WiFi experience.

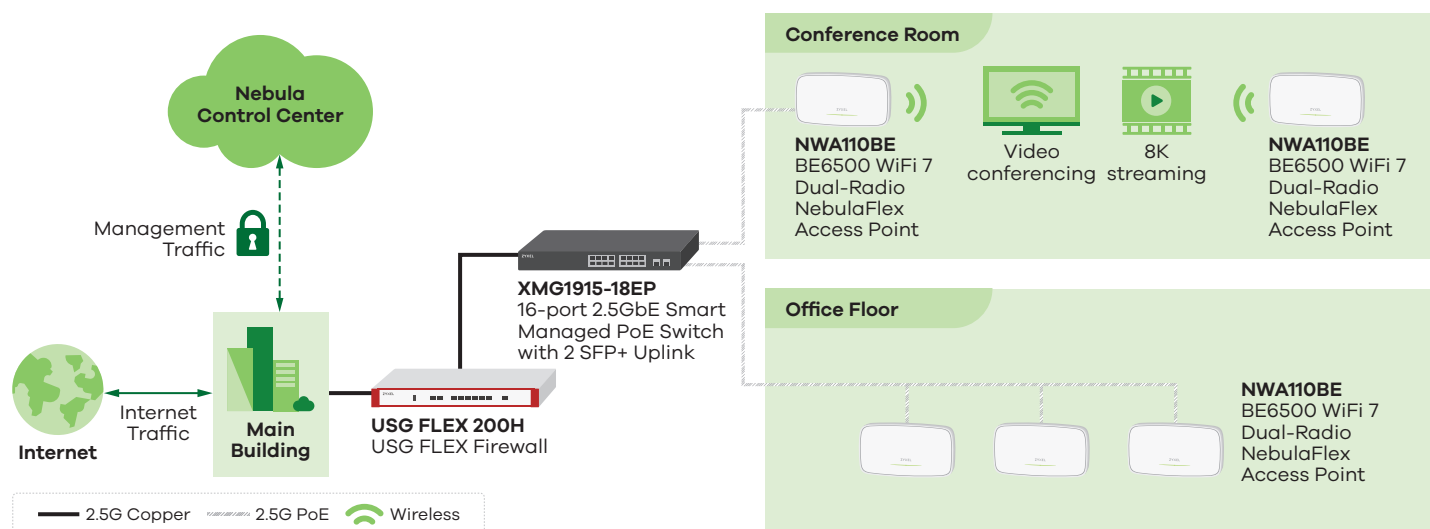
• Smooth and secure wireless experience

Powerful security add-on features like CNP/CNP+, DPPSK, and advanced authentication methods work together to create a robust and protected environment for your network.


Optimized wireless experience with advanced features

The NWA110BE 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 and triple-radio clients and distributes clients across 2.4GHz, 5GHz, and 6GHz bands on AP. All of these deliver a smooth, consistent and uninterrupted wireless experience to its users.

Application Diagram



Specifications

Model		NWA110BE
Product name		BE6500 WiFi 7 Dual-Radio NebulaFlex Access Point
		
Wireless		
Standard		IEEE 802.11 be/ax/ac/n/g/b/a
MIMO		MU-MIMO
Wireless speed	2.4GHz	688Mbps
	5GHz	4324Mbps
	6GHz	5764Mbps
Frequency band	2.4GHz	<ul style="list-style-type: none"> USA (FCC): 2.412 to 2.462GHz Europe (ETSI): 2.412 to 2.472GHz
	5GHz	<ul style="list-style-type: none"> USA (FCC): 5.15 to 5.35GHz; 5.470 to 5.850GHz European (ETSI): 5.15 to 5.35GHz; 5.470 to 5.725GHz
	6GHz	<ul style="list-style-type: none"> USA (FCC): 5.925 to 6.425GHz; 6.525 to 7.125GHz European (ETSI): 5.925 to 6.425GHz
Bandwidth		20-, 40-, 80-, 160-, 240- and 320-MHz
Conducted typical transmit output power*1	US (2.4GHz/5GHz/6GHz)	26/28/25dBm
	EU (2.4GHz/5GHz/6GHz)	19/26/22dBm
RF Design		
Antenna type		Internal antenna
Antenna gain	2.4GHz	1.49dBi, 2x2:2SS
	5GHz	2.78dBi, 4x4:2SS
	6GHz	3.17dBi, 4x4:2SS
Minimum receive sensitivity		Min. Rx sensitivity up to -99dBm


*1: Maximum transmit power is limited by local regulatory settings.

Model	NWA110BE	
WLAN Feature		
Band steering	Yes	
WDS/Mesh*2	Yes	
Fast roaming	Pre-authentication, PMK caching and 802.11r/k/v	
DCS	Yes	
Load balancing	Yes	
Advanced cellular coexistence	Yes	
Security		
Encryption	WEP/WPA/WPA2/WPA3	
Authentication	IEEE 802.1X/RADIUS authentication	
Access management	L2-isolation/MAC filtering/Rogue AP detection	
Networking		
IPv6	Yes	
VLANs	Yes	
WMM	Yes	
U-APSD	Yes	
Management		
Operating mode	Cloud managed/standalone	
ZON Utility	<ul style="list-style-type: none"> • Discovery of Zyxel switches, APs and gateways • Centralized and batch configurations <ul style="list-style-type: none"> ▪ IP configuration ▪ IP renew ▪ Device reboot ▪ Device locating ▪ Web GUI access ▪ Firmware upgrade ▪ Password configuration 	
Web UI/CLI	Yes	
SNMP	Yes	
Physical Specifications		
Item	Dimensions (WxDxH)(mm/in.)	250 x 160 x 47/9.84 x 6.30 x 1.85
	Weight (g/lb.)	810/1.79
Packing	Dimensions (WxDxH)(mm/in.)	279.5 x 180.5 x 66/11.00 x 7.11 x 2.60
	Weight (g/lb.)	1035/2.28
Included accessories	<ul style="list-style-type: none"> • Mount plate • Mounting screws 	
MTBF (hr)	691,722	
Physical Interfaces		
Ethernet port	1 x 1/2.5GbE LAN	
Power	<ul style="list-style-type: none"> • PoE (802.3at): power draw 21.5W • DC input: USB PD 15 VDC 2A (Type C) 	
PoE modes	IEEE 802.3af	No wireless
	IEEE 802.3at	Unrestricted
	IEEE 802.3bt	Unrestricted
Environmental Specifications		
Operating	Temperature	0°C to 50°C/32°F to 122°F
	Humidity	10% to 95% (non-condensing)
Storage	Temperature	-40°C to 70°C/-40°F to 158°F
	Humidity	10% to 90% (non-condensing)
Certifications		
Radio	FCC Part 15C, FCC Part 15E, FCC Part 2.1091, ETSI EN 300 328, EN 301 893, Draft EN 303 687, EN 50385, EN 50665, EN IEC 62311, LPO002	
EMC	FCC Part 15B, EN 301 489-1, EN 301 489-17, EN55032, EN55035, EN61000-3-2/-3, EN60601-1-2, BSMI CNS15936	
Safety	EN 62368-1, IEC 62368-1, BSMI CNS15598-1	




*2: WDS, ZyMesh, Smart Mesh and Industry's Open Mesh, Easy Mesh are different mesh systems that do not work with one another.

Recommended Accessories

Mounting Accessory

Model	ACCESSORY-ZZ0105F
Product photo	
Description	BAR ceiling clips for ceiling mount Zyxel AP (5 sets)

PoE Injector

Product	PoE12-30W	PoE12-60W	PoE12-90W
	2.5G PoE+ Injector	5G PoE++ Injector	10G PoE++ Injector
			
Specifications	<ul style="list-style-type: none">• Support speed: 100M/1G/2.5G• 2.5G data/PoE+ ports• 30W power budget• Complies with IEEE 802.3af PoE, 802.3at PoE+ standards• Easy plug-and-play desktop or wall-mounted installation	<ul style="list-style-type: none">• Support speed: 100M/1G/2.5G/5G/10G*• 10G* data/PoE++ ports• 60W power budget• Complies with IEEE 802.3af PoE, 802.3at PoE+, 802.3bt PoE++ 60W standards• Easy plug-and-play desktop or wall-mounted installation	<ul style="list-style-type: none">• Support speed: 100M/1G/2.5G/5G/10G• 10G data/PoE++ ports• 90W power budget• Complies with IEEE 802.3af PoE, 802.3at PoE+, 802.3bt PoE++ 90W standards• Easy plug-and-play desktop or wall-mounted installation
Dimensions (WxDxH)(mm/in.)	140 x 45.5 x 30/ 5.51 x 1.79 x 1.18	140 x 65 x 38.5/ 5.51 x 2.56 x 1.52	196.25 x 80 x 39.8/ 7.73 x 3.15 x 1.57

* PoE12-60W supports 10G speeds with deployments using Cat 6a cable or higher, up to a maximum length of 30 meters.

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

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