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› Zyxel NWA90BE PRO WiFi 7 BE6500 Wireless Access Point User Manual

ZYXEL NWA90BE PRO

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Model: NWA90BE PRO

1. INTRODUCTION

This manual provides instructions for the installation, operation, and maintenance of your Zyxel NWA90BE PRO WiFi 7 BE6500 Wireless Access Point. Please read this manual thoroughly before using the device to ensure proper setup and performance.

What's in the Box

- BE6500 4-Stream WiFi 7 Dual-Radio NebulaFlex Access Point
- Power Adapter
- Mount Plate
- Mounting Screws



Figure 1.1: Zyxel NWA90BE PRO Access Point and its included accessories, including the main unit, power adapter, mount plate, and mounting screws.

Key Features

- **WiFi 7 Performance:** Qualcomm quad-core CPU powers BE6500 dual-radio speeds up to 6.5Gbps across 2.4GHz (688 Mbps), 5GHz (4324 Mbps), and 6GHz (5764 Mbps), with MU-MIMO and MLO for lower latency and higher throughput.
- **BandFlex Technology:** Configure your radio for either 5GHz or 6GHz to fit seamlessly into existing networks today while staying ready for full 6GHz deployment when your devices support it.
- **Smart Mesh MLO:** Dual-radio Smart Mesh MLO eliminates cable runs and complex backhaul setups, delivering higher bandwidth and stronger interference resistance than single-radio mesh systems.
- **Flexible Management:** NebulaFlex allows you to run fully standalone via local GUI with no cloud account required, or switch to Nebula Cloud management anytime without additional cost or reconfiguration.
- **Enterprise Security:** Captive portal, IEEE 802.1X/RADIUS authentication, WPA3 encryption, rogue AP detection, and L2 isolation deliver small-business-grade network protection.

2. SETUP

Physical Installation

The NWA90BE PRO can be mounted on a wall or ceiling using the included mount plate and screws. Ensure the mounting location provides optimal signal coverage and is near a power source or a Power over Ethernet (PoE+) enabled switch.

Connecting the Device

1. **Power Connection:** The NWA90BE PRO can be powered in two ways:
 - **Using the Power Adapter:** Connect the included power adapter to the DC Jack on the access point and plug it into a power outlet.

- **Using PoE+:** Connect an Ethernet cable from a PoE+ enabled switch or injector to the 2.5GbE uplink port on the access point. This provides both power and data connectivity.

2. **Network Connection:** Connect an Ethernet cable from your network router or switch to the 2.5GbE uplink port on the access point.

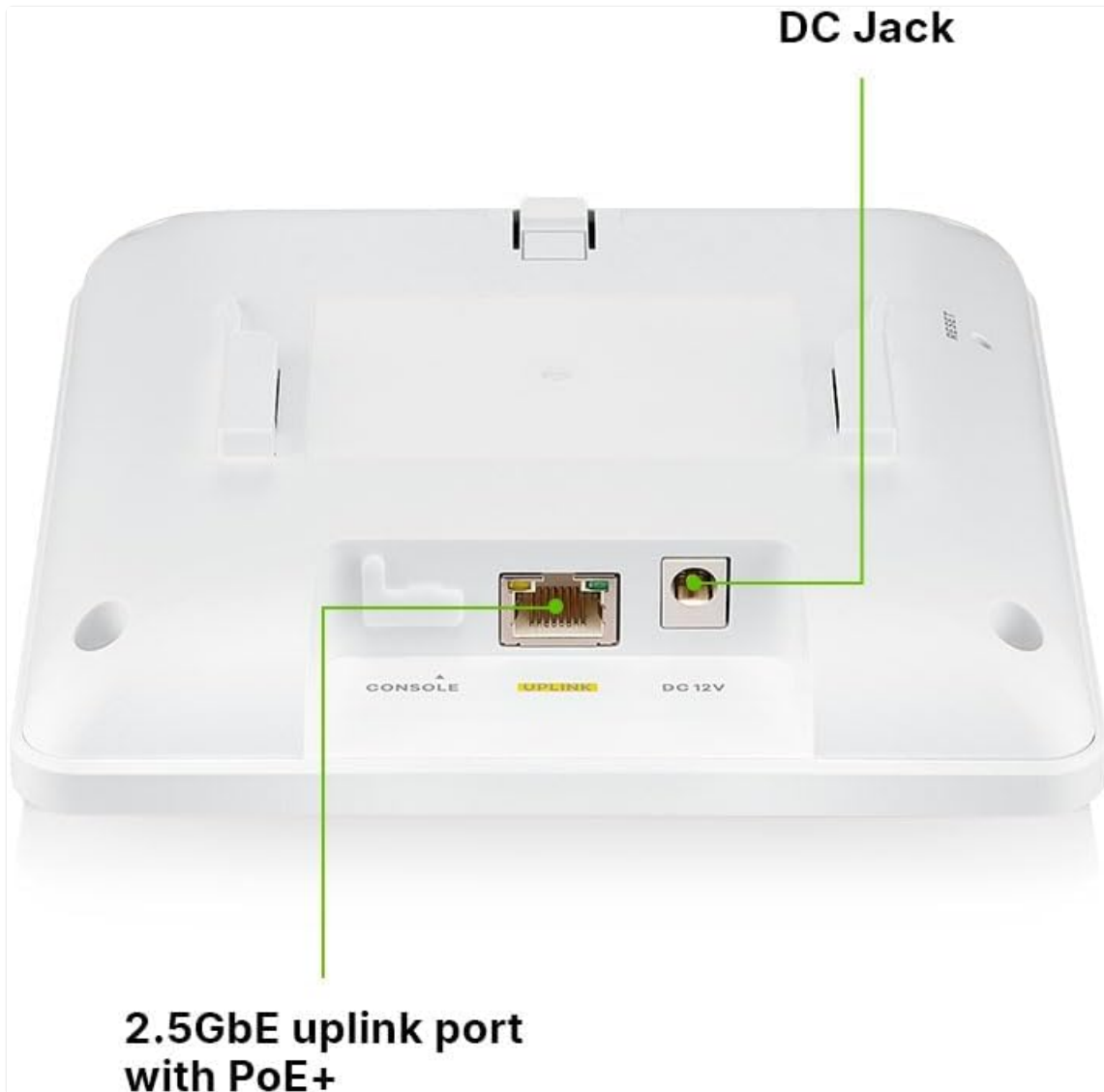


Figure 2.1: Rear view of the NWA90BE PRO, highlighting the DC Jack for power adapter connection and the 2.5GbE uplink port which supports PoE+.

Can be powered by PoE
at (PoE+) or
Power Adapter (included)

*PoE injector sold separately
(Model: PoE12-30W)

Flexible Powering Options



Figure 2.2: Illustration of the flexible powering options for the NWA90BE PRO, showing it can be powered by either PoE+ or the included power adapter.

Initial Configuration

The NWA90BE PRO supports two management modes: Standalone (local GUI) or Nebula Cloud management.

- **Standalone Mode:** Access the device's local web interface by connecting a computer directly to the access point or to the same network segment. Refer to the quick start guide for default IP address and login credentials.
- **Nebula Cloud Management:** For centralized management, register your device with the Zyxel Nebula Cloud platform. This allows for remote configuration and monitoring.

3. OPERATING THE DEVICE

NebulaFlex Management

The NWA90BE PRO features NebulaFlex, allowing seamless switching between standalone operation and cloud management. This flexibility ensures that your network can adapt to changing needs without requiring new hardware

or complex reconfigurations.

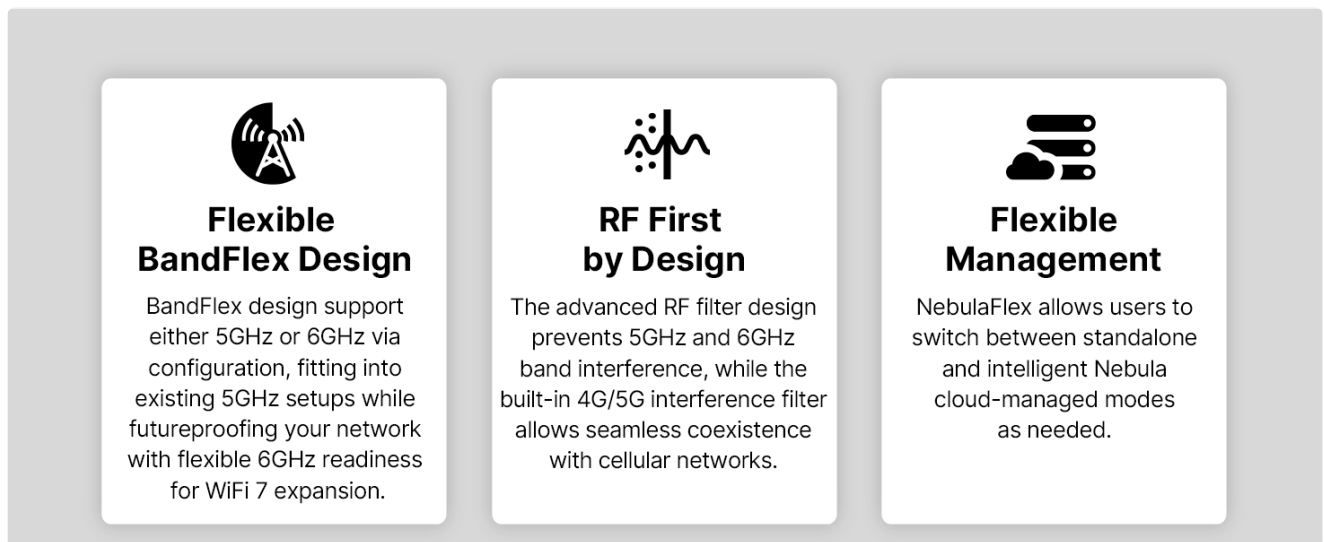


Figure 3.1: The Nebula Cloud Management interface displayed across various devices, illustrating its comprehensive monitoring and reporting capabilities.

BandFlex Technology

Utilize BandFlex technology to configure the access point's radio for either 5GHz or 6GHz operation. This feature allows for integration into existing 5GHz networks while providing a future-ready path for 6GHz deployment as your devices evolve.

Flexible BandFlex Radio



Dual-radio, BandFlex design supports
5GHz or 6GHz by configuration

Figure 3.2: Conceptual image illustrating the flexible BandFlex radio design, which supports configuration for either 5GHz or 6GHz operation.

Smart Mesh MLO

The Smart Mesh MLO feature creates dynamic wireless links, reducing the need for extensive cabling. This dual-radio backhaul boosts bandwidth, minimizes interference, and ensures high-performance, low-latency WiFi across your coverage area.

Smart Mesh MLO



Boosts bandwidth, cuts interference, and ensures high-performance WiFi

Figure 3.3: Diagram showing how Smart Mesh MLO boosts bandwidth and reduces interference by creating dynamic wireless links between access points.

Security Features

The NWA90BE PRO incorporates enterprise-grade security protocols to safeguard your network:

- **Captive Portal:** Provides a customizable login page for guest access, enhancing branding and control.
- **IEEE 802.1X/RADIUS Authentication:** Offers robust user authentication for secure network access.
- **WPA3 Encryption:** The latest standard in WiFi security, providing stronger encryption and protection against attacks.
- **Rogue AP Detection and L2 Isolation:** Helps prevent unauthorized access points and isolates client traffic for enhanced security.

Secure Authentication



Captive portal and 802.1X/RADIUS enable strong security and customizable login pages for business branding.

Figure 3.4: Visual representation of secure authentication features, including captive portal and 802.1X/RADIUS support, designed to protect business networks.

4. MAINTENANCE

To ensure optimal performance and longevity of your Zyxel NWA90BE PRO, follow these maintenance guidelines:

- **Regular Cleaning:** Keep the device free from dust and debris. Use a soft, dry cloth for cleaning. Do not use liquid cleaners.
- **Firmware Updates:** Regularly check for and apply firmware updates. If using Nebula Cloud management, updates can often be managed centrally. Firmware updates provide security enhancements, bug fixes, and new features.
- **Environmental Conditions:** Ensure the device operates within its specified temperature and humidity ranges to prevent overheating or damage.
- **Cable Management:** Ensure all cables are securely connected and not under strain.

5. TROUBLESHOOTING

If you encounter issues with your NWA90BE PRO, refer to the following common troubleshooting steps:

Problem	Possible Cause	Solution
Device does not power on	No power, faulty adapter/PoE, loose connection	Check power adapter connection or PoE source. Ensure power outlet is functional. Try a different power source if available.
No network connectivity	Ethernet cable issue, incorrect configuration, upstream network problem	Verify Ethernet cable is securely connected. Check router/switch status. Review network configuration settings (IP address, VLANs).
Poor WiFi signal or speed	Interference, improper placement, outdated firmware, channel congestion	Relocate the AP for better coverage. Check for sources of interference. Update firmware. Adjust WiFi channels in settings.
Cannot access local GUI	Incorrect IP address, network settings, firewall	Ensure your computer is on the same network segment. Verify the AP's IP address. Temporarily disable computer firewall.

Factory Reset

If issues persist, a factory reset may be necessary. To perform a factory reset, locate the RESET button on the device. With the device powered on, press and hold the RESET button for approximately 5-10 seconds until the LED indicators change, then release. The device will reboot with factory default settings.

6. SPECIFICATIONS

Feature	Detail
Brand	ZYXEL
Model Number	NWA90BE PRO
Wireless Communication Standard	802.11be (WiFi 7)
Frequency Band Class	Dual-Band (2.4GHz, 5GHz, 6GHz configurable)
Data Transfer Rate	Up to 6.5 Gigabits Per Second
LAN Port Bandwidth	2500 Mbps (2.5GbE)
Security Protocol	WPA2, WPA3
Management	NebulaFlex (Cloud/Standalone)
Compatible Devices	Personal Computer, Security Camera, Smartphone, Tablet
Included Components	BE6500 4-Stream WiFi 7 Dual-Radio NebulaFlex Access Point, Mount Plate, Mounting Screws, Power Adapter
Item Weight	2 Pounds
UPC	760559131968

7. WARRANTY INFORMATION

Warranty information for the Zyxel NWA90BE PRO is not explicitly detailed in the provided product data. Please refer to the official Zyxel website or contact Zyxel customer support for the most current and complete warranty terms and conditions applicable to your region.

8. SUPPORT

For further assistance, technical support, or to access additional resources, please visit the official Zyxel support website. You can also find documentation, FAQs, and community forums there. If you are using Nebula Cloud management, the Nebula portal provides integrated support and diagnostic tools.