



WBE665S

BE22000 12-Stream WiFi 7 Triple-Radio NebulaFlex Pro Ruggedized Access Point

The Zyxel WBE665S is a BE22000, 12-stream WiFi 7 triple-radio access point delivering speeds of up to 22Gbps, purpose-built for harsh and demanding environments. With an IP67-rated ruggedized enclosure that is dust-proof, water-proof, and weatherproof, the WBE665S is designed for reliable indoor and outdoor deployments in challenging conditions such as industrial sites, warehouses, transportation hubs, stadiums, outdoor campuses, and exposed public spaces. It supports a wide operating temperature range from -40°C to 70°C, ensuring stable performance even under extreme heat or cold.

Powered by WiFi 7 with Multi-Link Operation (MLO), the WBE665S allows devices to transmit and receive data across multiple frequency bands simultaneously, improving throughput, reducing latency, and ensuring more stable connections in high-density and interference-prone environments.

Designed to comply with country-specific 6GHz outdoor regulations, the WBE665S supports both indoor and outdoor operation via a built-in mode switch. Users can select indoor mode to enable full tri-band performance, or outdoor mode to disable the 6GHz radio, ensuring regulatory compliance while maintaining optimal wireless performance.

For flexible, high-capacity uplink connectivity, the WBE665S features a high-speed 10GbE fiber port that enables long-distance indoor and outdoor deployments beyond the 100-meter limitation of copper Ethernet. An additional 10GbE Ethernet port with PoE++ support is available for simplified power and data delivery in shorter-range installations.



Triple-radio (4x4:4 in 2.4GHz/5GHz/6GHz) 802.11be AP provides ultra-fast speeds up to 22Gbps



Designed for harsh environments with up to IP67 industrial-grade weather proofing



Smart antenna technology automatically adapts antenna patterns to optimize WiFi performance



High-speed 10GbE fiber port enables long-distance deployments beyond the 100m limit of Ethernet, with an optional 10GbE PoE++ Ethernet port for shorter runs



NebulaFlex Pro allows users to switch between standalone, on-premises controller, or intuitive Nebula cloud managed modes as needed

The WBE665S is equipped with smart antenna technology that dynamically adapts antenna patterns to optimize coverage, minimize interference, and deliver consistent performance in complex RF environments. Combined with its ruggedized IP67 design, the access point ensures stable, high-quality connectivity even under extreme temperatures, heavy rain, dust exposure, and high-humidity conditions.

Benefits

Next-Generation WiFi 7 with Multi-Link Operation

WiFi 7 (IEEE 802.11be) represents the next evolution of wireless technology, supporting all three frequency bands—2.4GHz, 5GHz, and 6GHz—to deliver unprecedented speed and performance. With the introduction of Multi-Link Operation (MLO), devices can simultaneously transmit and receive data across multiple bands and channels, significantly increasing throughput while reducing latency and improving connection reliability. Combined with Zyxel's advanced management and security innovations, the WBE665S delivers next-generation, enterprise-grade connectivity that enables demanding applications such as VR/AR, online gaming, remote offices, and cloud-based services.

Ruggedized design with long-distance fiber connectivity

The WBE665S features an IP67-rated ruggedized design that is fully dust-proof, water-proof, and weatherproof, making it ideal for deployment in harsh environments such as outdoor campuses, industrial sites, warehouses, transportation hubs, and exposed public areas. Engineered to withstand extreme temperatures, heavy rain, high humidity, and dusty conditions, it ensures reliable operation where standard access points cannot. To support these demanding deployments, the WBE665S is equipped with a high-speed 10GbE fiber port that enables long-distance indoor and outdoor installations beyond the 100-meter limitation of copper Ethernet, providing stable, high-capacity connectivity while minimizing signal loss and electromagnetic interference.

Enhancing WiFi performance: The versatility of smart antenna technology

The WBE665S features smart antenna technology that dynamically adjusts antenna patterns in real time to optimize signal direction, enhance coverage, and reduce interference. By intelligently adapting to client locations and surrounding RF conditions, it delivers consistently high performance and reliable connectivity in both indoor and outdoor environments, even in complex or challenging deployments.

With NebulaFlex Pro, the WBE665S offers maximum deployment flexibility, allowing users to choose between cloud-managed, controller-based, or standalone management modes to meet diverse network requirements.

NebulaFlex Pro – simply manage it your way!

The NebulaFlex Pro provides extended flexibility, allowing users to easily switch among standalone, on-premises controller or our intuitive NCC (Nebula Control Center) modes any time according to your needs without additional cost while protecting wireless technology investments. The privilege of one-year professional pack you can get once upon registration on Nebula includes wireless health, sitewide topology, 365-day statistics on the devices and clients monitoring along with more upcoming advanced features on NCC and its App.

Nebula, the intelligent cloud management

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


- **Automated WLAN management & optimization**

With features like WiFi Aid and Wireless health, Nebula enables automated wireless network management and optimization, ensuring the best possible WiFi user experience.

- **Enhanced privacy & security**

A range of security add-on features like CDR, Secure WiFi, CNP+, DPPSK, and advanced authentication methods work together to create a robust and protected environment for your network.

Specifications

Model	WBE665S	
Product name	BE22000 12-Stream WiFi 7 Triple-Radio NebulaFlex Pro Ruggedized Access Point	
		
Wireless		
Standard	IEEE802.11 be/ax/ac/n/g/b/a	
MIMO	MU-MIMO	
Wireless speed	2.4GHz	1376Mbps
	5GHz	8646Mbps
	6GHz	11530Mbps
Frequency band	2.4GHz	Europe (ETSI): 2.412 to 2.472GHz
	5GHz	European (ETSI): 5.15 to 5.35GHz; 5.470 to 5.725GHz
	6GHz	European (ETSI): 5.925 to 6.425GHz*4
Bandwidth	20-, 40-, 80-, 160-, 240- and 320-MHz	
Conducted typical transmit output power*1	EU (2.4GHz/5GHz) or +/6GHz)	15/24/18dBm
RF Design		
Antenna type	Smart Antenna	
Antenna gain	2.4GHz	5dBi, 4×4:4SS
	5GHz	6dBi, 4×4:4SS
	6GHz	5dBi, 4×4:4SS
Minimum receive sensitivity	Min. Rx sensitivity up to -104 dBm	
WLAN Feature		
Band steering	Yes	
WDS/ Mesh*2	Yes	
Wireless bridge	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	

Model		WBE665S
Management		
Operating mode	Nebula Cloud managed/controller-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)	410 × 410 × 110 / 16.14 × 16.14 × 4.33
	Weight (g/lb)	4960 / 10.93
Packing	Dimensions (WxDxH)(mm/in)	564.5 × 535.5 × 176.5 / 22.22 × 21.08 × 6.95
	Weight (g/lb)	8104 / 17.87
Included accessories	<ul style="list-style-type: none"> Pole/wall mounting kits Waterproof Cable glands & Connector 	
MTBF (hr)	892,148	
Physical Interfaces		
Ethernet port	1 × 1/2.5/5/10Gbps LAN or SFP+	
Power	<ul style="list-style-type: none"> PoE (802.3bt): power draw 40.64W DC input: 24-48VDC 	
PoE modes	IEEE802.3af	Not supported
	IEEE802.3at	2.4GHz 2T4R; 5GHz 2T4R; 6GHz 2T4R*3
	IEEE802.3bt	Unrestricted
Environmental Specifications		
Weather protection	IP67	
Operating	Temperature	-40°C to 70°C/ -40°F to 158°F
	Humidity	10% to 90% (non-condensing)
Storage	Temperature	-40°C to 70°C/ -40°F to 158°F
	Humidity	10% to 90% (non-condensing)
Certifications		
Radio	ETSI EN 300 328, EN 301 893, EN 303 687	
EMC	EN 301 489-1, EN 301 489-17, EN55032, EN55035, EN61000-3-2/-3, EN60601-1-2	
Safety	EN 62368-1, IEC 62368-1	

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

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

*3: WBE665S with 2T4R configuration can run with All Zyxel PoE+ switch models without any problem.

*4: 6GHz usage may be restricted to Indoor Only depending on regional laws. Installers must ensure hardware configuration complies with local regulatory requirements for 6GHz operation.

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

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