



WAX640S-6E

AXE7800 Tri-Band WiFi 6E Access Point

Featuring 8 spatial streams (4x4 in 6 GHz, 2x2 in 5 GHz, 2x2 in 2.4 GHz) with the maximum data rate of 7.8 Gbps, the Zyxel WAX640S-6E is the tri-band, WiFi 6E access point that includes all the benefits of WiFi 6 capabilities like OFDMA, MU-MIMO, BSS Coloring, and brings them into the brand-new, interference-free 6 GHz that more than doubles the WiFi capacity to deliver ultra-fast speed and low-latency connections.

The brand-new, interference-free 6 GHz band presents a solution to quenching the thirst for today's network hungry for more bandwidth, making it a perfect choice for high-density WiFi and emerging technology connectivity. To reach the full potential of the new band, Zyxel 6E Boost, using the high-gain 4x4 streams in 6 GHz, increases the maximum gains in transmit beamforming and receive MIMO to extend its range and ensure the highest performance is delivered.

The WAX640S-6E is ideal to be used in the high density environments such as transport hubs, exhibition halls, schools, offices, hotels, restaurants, or any other organizations that need to accommodate a large number of devices as it can offer the optimal wireless service for everyone, every time they connect to WiFi.

The built-in smart antenna technology, proven to be capable to mitigate co-channel interference, continuously monitors the connection and adaptively adjusts its antenna patterns to ensure that the optimum performance is delivered to every connection, which means more users and devices can be connected without any degradation in performance or response time even in high-density environments.



Tri-band coverage, 2.4 GHz, 5 GHz, and 6 GHz (2x2 + 2x2 + 4x4) 802.11ax AP to deliver maximum data rate of 7.8 Gbps



Zyxel 6E Boost, using the high-gain 4 streams in 6 GHz, helps extend range and maximize performance of the new band



The smart antenna technology mitigates interference and boosts WiFi performance



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



NebulaFlex Pro offers the full flexibility for users to easily switch between Nebula cloud-managed, controller-managed, and standalone modes

Benefits

WiFi 6E — bringing WiFi 6 into 6 GHz spectrum

WiFi 6E is the WiFi 6 extended into 6 GHz spectrum. It includes all the WiFi 6 features, plus the following:

- **2.5X More Capacity:** 2.5 times more spectrum with the extended 6 GHz band with no legacy devices
- **Superwide Channels:** Utilizing up to seven additional superwide 160 MHz channels in 6 GHz for bandwidth-demanding applications like VR/AR, WiFi calling, and high-definition video streaming
- **No Interference:** No interference from microwaves and the non-6E devices. Only WiFi 6E capable devices can use the 6 GHz band.

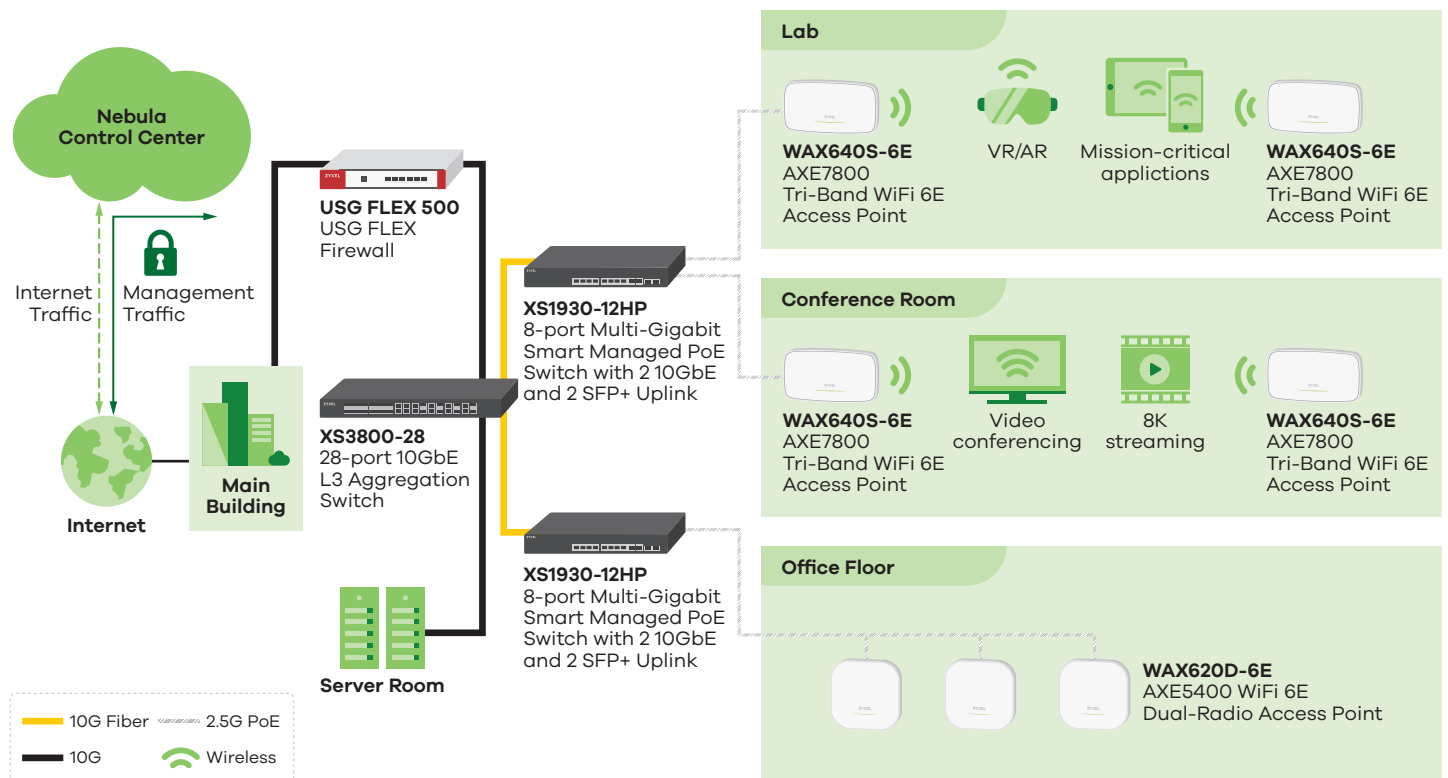
NebulaFlex Pro — simply manage it your way!

The NebulaFlex Pro provides extended flexibility, allowing users to easily switch among standalone, on-promises 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, site-wide topology, 365-day statistics on the devices and clients monitoring along with more upcoming advanced features on NCC and its App.


The advanced RF filter and cellular network coexistence minimize interference

There is only 50 MHz between 5 GHz and 6 GHz, advanced filtering is crucial to prevent interference. Without it, it will have a severe impact on the quality of transmission/reception on the adjacent channels or even make them unusable. The advanced RF filter is embedded in the product design to remove the interference issue and guarantee performance in all channels in either band concurrently. In addition, to enable 4G/5G cellular network coexistence, the AP has a built-in 4G/5G interference filter. The visible or invisible 4G/5G indoor antennas in the environment is no longer an issue when installing the APs.

Application Diagram



Specifications

Model	WAX640S-6E	
Product name	AXE7800 Tri-Band WiFi 6E Access Point	
		
Wireless		
Standard	IEEE 802.11 ax/ac/n/g/b/a	
MIMO	MU-MIMO	
Wireless speed	2.4 GHz	575 Mbps
	5 GHz	2400 Mbps
	6 GHz	4800 Mbps
Frequency band	2.4 GHz	<ul style="list-style-type: none"> USA (FCC): 2.412 to 2.462 GHz Europe (ETSI): 2.412 to 2.472 GHz
	5 GHz	<ul style="list-style-type: none"> USA (FCC): 5.15 to 5.35 GHz; 5.470 to 5.850 GHz European (ETSI): 5.15 to 5.35 GHz; 5.470 to 5.725 GHz
	6 GHz	<ul style="list-style-type: none"> USA (FCC): 5.925 to 6.425 GHz; 6.525 to 7.125 GHz European (ETSI): 5.925 to 6.425 GHz
Bandwidth	20-, 40-, 80- and 160-MHz	
Conducted typical transmit output power*1 (limited by local regulatory requirements)	US (2.4 GHz/5 GHz) or +/6 GHz)	24/25/24 dBm
	EU (2.4 GHz/5 GHz) or +/6 GHz)	18/25/19 dBm
RF Design		
Antenna type	4x4 + 2x2+ 2x2 smart antenna	
Antenna gain	2.4 GHz	Peak gain 3 dBi
	5 GHz	Peak gain 6 dBi
	6 GHz	Peak gain 6 dBi
Minimum receive sensitivity	Min. Rx sensitivity up to -104 dBm	
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-PSK/WPA3	
Authentication	WPA/WPA2/WPA3-Enterprise/EAP/IEEE 802.1X/RADIUS authentication	
Access management	L2-isolation/MAC filtering/Rogue AP detection	
Networking		
IPv6	Yes	
VLANs	Yes	
WMM	Yes	
U-APSD	Yes	

*1: Conducted typical transmit output power excludes antenna gain. For total (EIRP) transmit power, add antenna gain.

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

Model	WAX640S-6E	
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.)	270 x 150 x 47/10.63 x 5.91 x 1.85
	Weight (g/lb.)	900/1.98
Packing	Dimensions (WxDxH)(mm/in.)	324 x 184 x 74/11.76 x 7.24 x 2.91
	Weight (g/lb.)	1220/2.69
Included accessories	<ul style="list-style-type: none"> Mount plate Mounting screws 	
MTBF (hr)	361,400	
Physical Interfaces		
Ethernet port	<ul style="list-style-type: none"> 1 x 1/2.5 Gbps LAN 1 x 1 Gbps LAN 	
Power	<ul style="list-style-type: none"> PoE (802.3)bt: power draw 28 W DC input : 12 V DC 2.5 A 	
PoE modes	IEEE 802.3af	No wireless
	IEEE 802.3at	Unrestricted; 6 GHz 2T4R in the listed countries*
	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	CC Part 15C, FCC Part 15E, ETSI EN 300 328, EN 301 893, EN 303 687, LP0002	
EMC	FCC Part 15B, EN 301 489-1, EN 301 489-17, EN55022, EN55024, EN60601-1-2, BSMI CNS13438	
Safety	Safety EN 62368, BSMI CNS14336-1	

* United States; Morocco, UAE, South Korea, Slovenia, Peru, Brazil, Canada, Iceland, and Saudi Arabia

Accessory

Item	Part Number
PoE injector	POE12-60W-EU0101F, POE12-60W-US0101F
Power adapter	ACCESSORY-ZZ0104F
T-bar clips	ACCESSORY-ZZ0105F

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

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