



## 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.

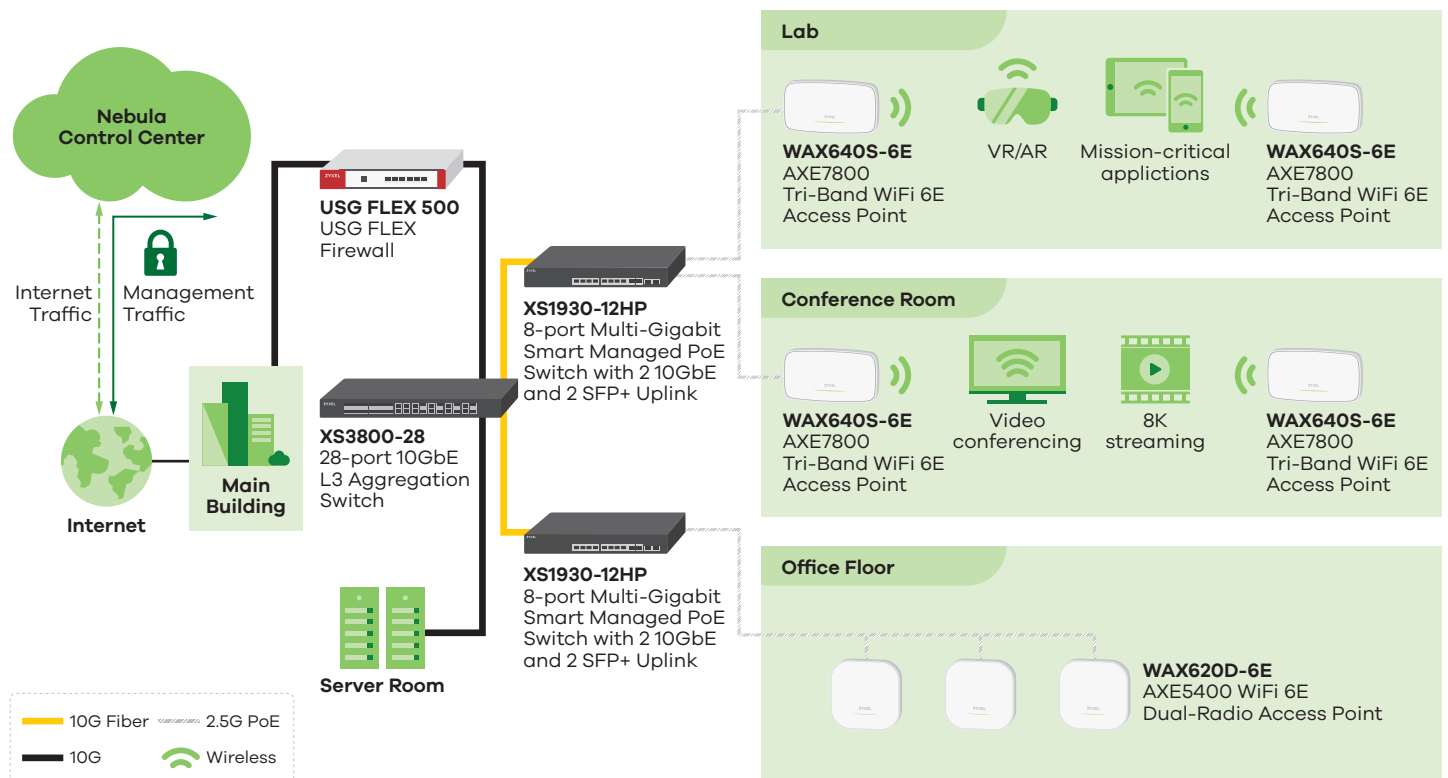
### NebulaFlex Pro — simply manage it your way!

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

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

<b>Model</b>	<b>WAX640S-6E</b>	
<b>Management</b>		
<b>Operating mode</b>	Nebula cloud managed/controller-managed/standalone	
<b>ZON Utility</b>	<ul style="list-style-type: none"> <li>Discovery of Zyxel switches, APs and gateways</li> <li>Centralized and batch configurations <ul style="list-style-type: none"> <li>IP configuration</li> <li>IP renew</li> <li>Device reboot</li> <li>Device locating</li> </ul> </li> <li>Web GUI access</li> <li>Firmware upgrade</li> <li>Password configuration</li> </ul>	
<b>Web UI/CLI</b>	Yes	
<b>SNMP</b>	Yes	
<b>Physical Specifications</b>		
<b>Item</b>	<b>Dimensions (WxDxH)(mm/in.)</b>	270 x 150 x 47/10.63 x 5.91 x 1.85
	<b>Weight (g/lb.)</b>	900/1.98
<b>Packing</b>	<b>Dimensions (WxDxH)(mm/in.)</b>	324 x 184 x 74/11.76 x 7.24 x 2.91
	<b>Weight (g/lb.)</b>	1220/2.69
<b>Included accessories</b>	<ul style="list-style-type: none"> <li>Mount plate</li> <li>Mounting screws</li> </ul>	
<b>MTBF (hr)</b>	361,400	
<b>Physical Interfaces</b>		
<b>Ethernet port</b>	<ul style="list-style-type: none"> <li>1 x 1/2.5 Gbps LAN</li> <li>1 x 1 Gbps LAN</li> </ul>	
<b>Power</b>	<ul style="list-style-type: none"> <li>PoE (802.3)bt: power draw 28 W</li> <li>DC input : 12 V DC 2.5 A</li> </ul>	
<b>PoE modes</b>	<b>IEEE 802.3af</b>	No wireless
	<b>IEEE 802.3at</b>	Unrestricted; 6 GHz 2T4R in the listed countries*
	<b>IEEE 802.3bt</b>	Unrestricted
<b>Environmental Specifications</b>		
<b>Operating</b>	<b>Temperature</b>	0°C to 50°C/32°F to 122°F
	<b>Humidity</b>	10% to 95% (non-condensing)
<b>Storage</b>	<b>Temperature</b>	-40°C to 70°C/-40°F to 158°F
	<b>Humidity</b>	10% to 90% (non-condensing)
<b>Certifications</b>		
<b>Radio</b>	CC Part 15C, FCC Part 15E, ETSI EN 300 328, EN 301 893, EN 303 687, LP0002	
<b>EMC</b>	FCC Part 15B, EN 301 489-1, EN 301 489-17, EN55022, EN55024, EN60601-1-2, BSMI CNS13438	
<b>Safety</b>	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](http://www.zyxel.com)

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