ZYXEL NETWORKS

WAX510D

802.11ax (WiFi 6) Dual-Radio Unified Pro Access Point

The WAX510D is truly the next generation of wireless (WiFi 6) AP, especially for businesses looking to strike the right balance between performance and budget. Its built-in 2nd Generation WiFi 6 (Qualcomm 802.11ax 2.0) chipset allows the access point to take advantage of the full range of WiFi 6 technologies including uplink OFDMA and MU-MIMO, which can't be found in the earlier releases of 802.11ax. The WAX510D boasts an impressive Quad-Core processor with 2 network accumulators to guarantee that a smooth and consistently fast service is provided to each client at all times. Also, it uses the second generation transmit beamforming technology incorporating Low End Sensitivity Improvements and Time Domain Channel Smoothing allowing data rates to increase for not only MU-MIMO clients, but for all existing ones as well.

The WAX510D is not only efficient at delivering impressive high speeds with smooth and consistent delivery to wireless clients, but also it's efficient on power. The WAX510D can deliver its impressive performance while keeping the consumption of PoE within the PoE+ standard, so that you can enjoy the latest WiFi 6 technology offering without the need to invest in upgrading your traditional switching architecture.

The WAX510D with NebulaFlex Pro offers the full flexibility for users to switch among standalone, controller-managed and cloud-managed modes. In addition, it comes with a 1-year bundled Nebula Professional Pack license*1 that eliminates immediate licensing cost when migrating to full-featured cloud management.

- Dual-radio (dual 2x2 MIMO) 802.11ax AP provides maximum data rate of 1775 Mbps
- OFDMA is arguably the best innovation of WiFi, delivering the highest performance and low latency for all scenarios
- Dual-optimized antenna provides wall-/ceiling-mounting modes to fit in your deployment
- NebulaFlex Pro allows users to switch among standalone, on-premises controller managed or intuitive Nebula cloud managed modes as needed
- Advanced Cellular Coexistence minimizes interferences from 4G/5G cellular networks
- Next generation beamforming technology delivers maximum coverage

nebula

Zyxel one network
Redefining network integration

Benefits

Bringing next generation WiFi within reach

Zyxel's new WAX510D is a true WiFi 6 access point that delivers faster performance and massive increased-capacity, which along with unique Zyxel dual optimized antenna technology, make the user experience even better. Apart from running at 25% faster speed, the WAX510D can also accommodate more client devices without any fall-off in speed, allowing an easy scale-up capacity to support hundreds of connections without increased latency.

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.

Unparalleled high-density performance

Essentially, there are two technologies that make a real difference in WiFi 6 – orthogonal frequency-division multiple access (ODFMA), and spatial re-use, which is also referred to as Basic Service Set (BSS) coloring. These make WiFi 6 a much more efficient technology than 802.11ac. The BSS coloring allows multiple access points to be used in the same vicinity without fear of co-channel interference.

Superior performance with innovative "Dual-optimized" antenna

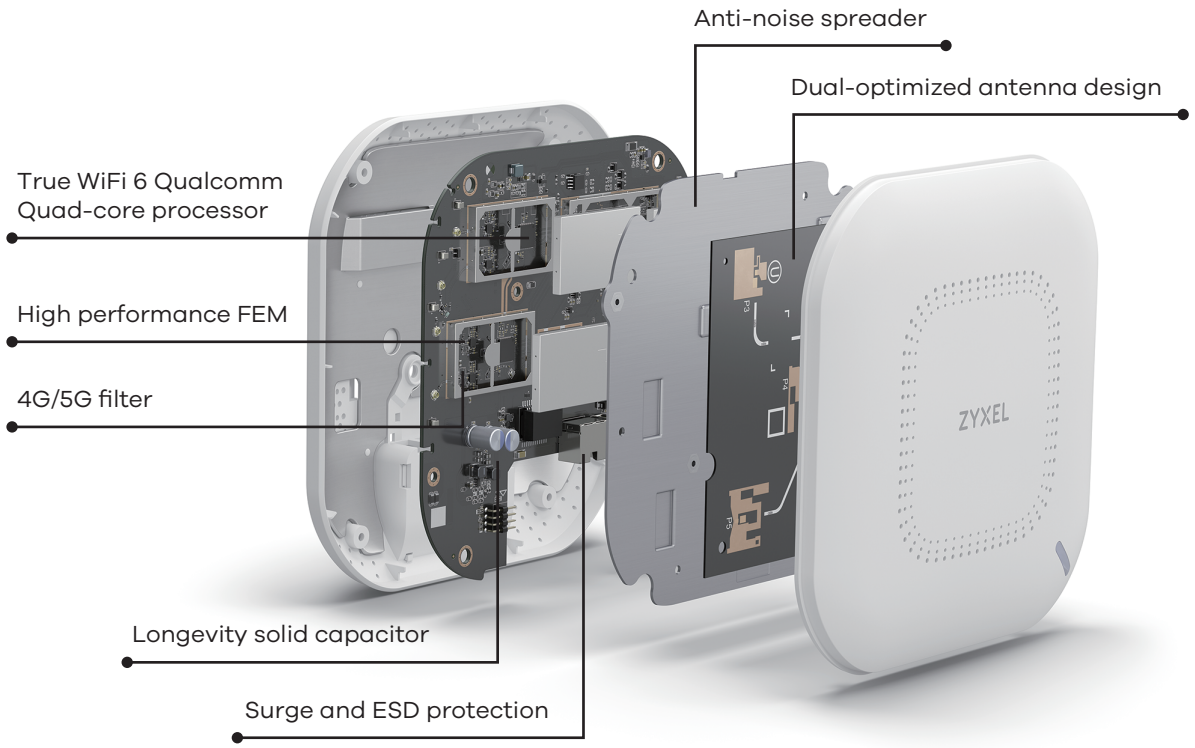
People without RF expertise may not realize that installing an AP optimized for ceiling-mount as wall-mount may cause the ceiling-mount radiation pattern to interfere with other devices up- or downstairs as well as to deliver signals with shorter-than-expected range for its clients. Designed with the innovative "Dual-optimized" antenna, the WAX510D adapts to both wall- and ceiling-mount installations. Thus, users can switch between the two optimized antenna modes easily to fit either situation. To boost WiFi speeds for your network, the WAX510D is definitely an excellent choice.

4G/5G cellular network coexistence

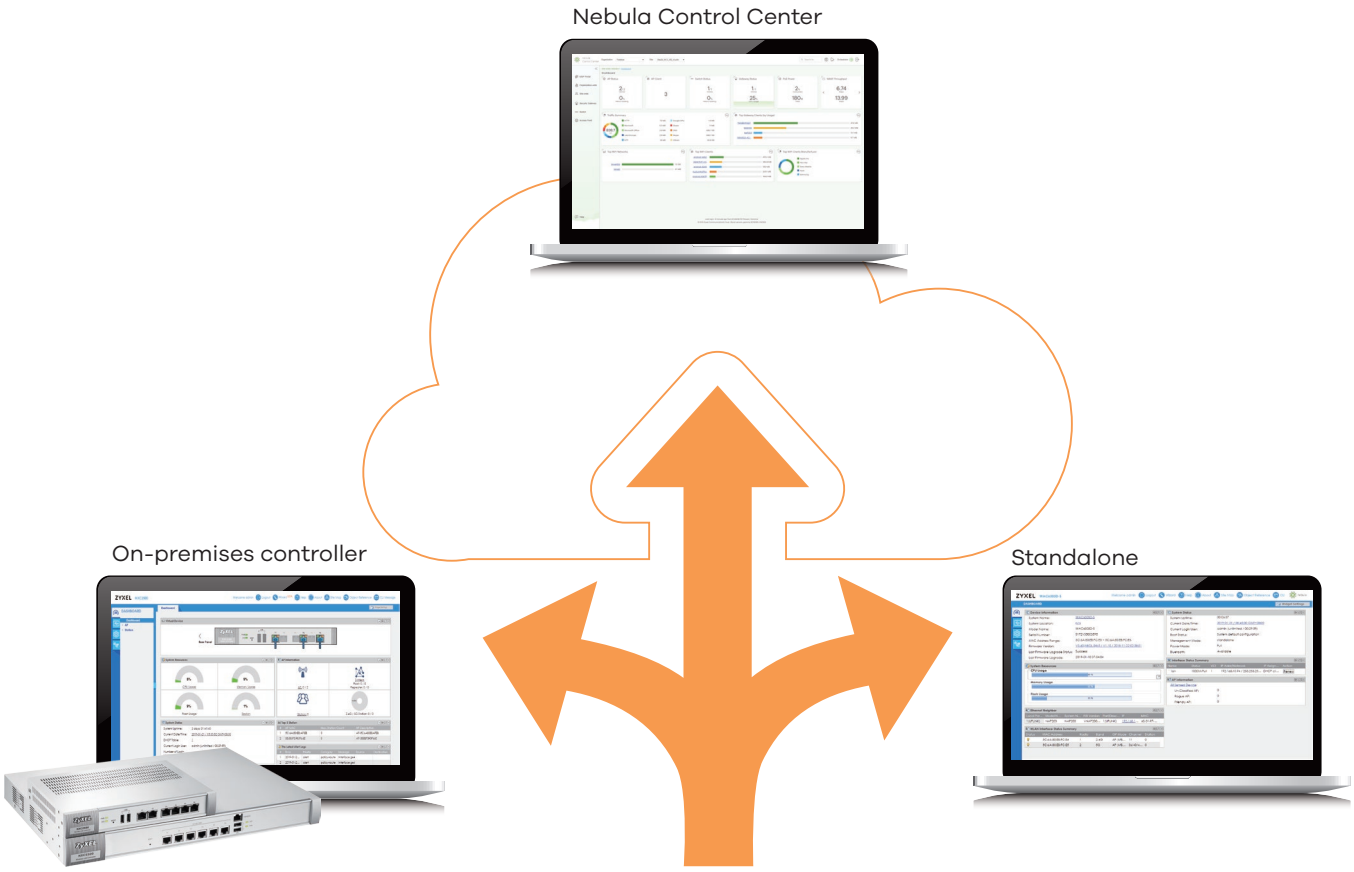
With the growing pervasiveness of mobile devices in the wireless network, users start to experience degraded performance, such as ping drops and high latency, however whenever user shutdown the mobile equipment, wireless service resumes working smooth. Thus, to enable 4G/5G cellular network coexistence and minimize interference from 4G/5G antennas or signal boosters, the WAX510D has built-in 4G/5G interference filters. As a result, the visible or invisible 4G/5G indoor antennas in the environment is no longer an issue when installing APs.

*1: The licensing terms may vary depending on part numbers or regions Please contact your local sales representative.

Powerful Hardware Design



Switch Among Triple Modes



Specifications

Model		WAX510D
Product name		802.11ax (WiFi 6) Dual-Radio Unified 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	1200 Mbps
Frequency band	**2.4 GHz (IEEE 802.11 b/g/n/ax)**	• USA (FCC): 2.412 to 2.462 GHz • Europe (ETSI): 2.412 to 2.472 GHz
	5 GHz (IEEE 802.11 a/n/ac/ax)	• USA (FCC): 5.15 to 5.35 GHz; 5.725 to 5.850 GHz • European (ETSI): 5.15 to 5.35 GHz; 5.470 to 5.725 GHz
Bandwidth		20-, 40-, 80-MHz
Conducted typical transmit output power	**US (2.4 GHz/5 GHz)**	23/26 dBm
	EU (2.4 GHz/5 GHz)	20/25 dBm
RF Design		
Antenna type		Dual optimized antenna
Antenna gain	**2.4 GHz**	Peak gain 5 dBi
	5 GHz	Peak gain 6 dBi
Minimum receive sensitivity		Min. Rx sensitivity up to -101 dBm
WLAN Feature		
Band steering		Yes
WDS		Future support
Mesh AP (By license)		Future support
Mesh AP for multiple SSID with VLAN		Future support
Smart mesh		Future support
Fast roaming		Pre-authentication, PMK caching and 802.11r
DCS		Yes
Load balancing		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
DiffServ marking		Yes

Model		WAX510D
Management		
Operating mode		Nebula Cloud managed/controller-managed/standalone
ZON Utility		• Discovery of Zyxel switches, APs and gateways • Centralized and batch configurations ▪ IP configuration ▪ Web GUI access ▪ IP renew ▪ Firmware upgrade ▪ Device reboot ▪ Password configuration ▪ Device locating
Zyxel Wireless Optimizer		• WiFi AP planning • WiFi coverage detection • Wireless health management
Web UI/CLI		Yes
SNMP		Yes
Physical Specifications		
Item	**Dimensions (WxDxH)(mm/in.)**	180 x 180 x 39/7.09 x 7.09 x 1.54
	Weight (g/lb.)	453/1.00
Packing	**Dimensions (WxDxH)(mm/in.)**	229 x 216 x 64/9.02 x 8.50 x 2.52
	Weight (g/lb.)	770/1.70
Included accessories		• Mount plate • Mounting screws
MTBF (hr)		635,837
Physical Interfaces		
Ethernet port		1 x 10/100/1000M LAN
Power		• PoE (802.3)at: power draw 17 W • DC input: 12 VDC 1.5 A
Environmental Specifications		
Operating	**Temperature**	0°C to 50°C/32°F to 122°F
	Humidity	10% to 95% (non-condensing)
Storage	**Temperature**	-30°C to 70°C/-22°F to 158°F
	Humidity	10% to 90% (non-condensing)
Certifications		
Radio		FCC Part 15C, FCC Part 15E, ETSI EN 300 328, EN 301 893, LP0002
EMC		FCC Part 15B, EN 301 489-1, EN 301 489-17, EN55022, EN55024, EN61000-3-2/-3, EN60601-1-2, BSMI CNS13438
Safety		Safety EN 60950-1, IEC 60950-1, BSMI CNS14336-1

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

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