

# ZYXEL



## NAP203

### 802.11ac Dual-Radio, Dual-Optimized Antenna 3x3 Nebula Cloud Managed Access Point

The ZyXel Nebula NAP203 802.11ac Dual-Radio, Dual-optimized Antenna 3x3 Nebula Cloud Managed Access Point is a high-performance 3-stream 802.11ac Wi-Fi AP featuring ultra-fast speeds of up to 1.75 Gbps with a groundbreaking "dual-optimized" antenna design. Through the innovative adjustable antenna setting, the NAP203 can provide the best signal coverage in both ceiling-mount and wall-mount deployments to deliver constant, no-compromise Wi-Fi performance. Additionally, the ultra-slim ID design at 32mm height blends perfectly into modern interior decorations.

Every Nebula AP has been engineered for cloud management. Based on the NETCONF standard, all data traffics between the cloud and APs are exchanged using secure transports to ensure transaction-safe configuration on all Nebula devices. Furthermore, with the intuitive management interface, administrators are able to control all the APs quickly even without training.

### Benefits

#### Zero-touch deployments

The ZyXel Nebula APs auto-configure themselves after installation, and then automatically connect to the Nebula cloud to join the network; so auto-configuration, provision, monitoring and diagnostics can be performed anytime, anywhere. This simplifies network setup and enables deployment of Nebula APs to a remotely located network even by non-IT professionals.



Cloud-managed, dual-radio 3x3 MIMO 802.11ac access point



Supports combined data rates of up to 1.75 Gbps



Dual-optimized antenna allows pattern optimization adapting to wall- or ceiling-mount installations



Self-configuration and zero-touch deployment



Enterprise-class security and RF optimization



Dynamic Channel Selection, Load Balancing and Smart Client Steering



Ultra-slim ID design at 32 mm height blends into modern interior decorations



nebula

## Dual-optimized antenna design

Ceiling-mount installation is now the major type of wireless deployments; it is still common that most APs on the market today are designed with a single static radiation pattern for ceiling-mount installations. However, this kind of design may create interference with devices on upper and lower floors, and it delivers only short-range signals to wireless clients placed in front of the wall-mount AP. To deliver optimal Wi-Fi performance in both ceiling- and wall-mount installations, the Zyxel NAP203 features an innovative "Dual-optimized" antenna. Pattern of the antenna can be adjusted via a physical switch or cloud configuration in just seconds.

## Optimized wireless experience

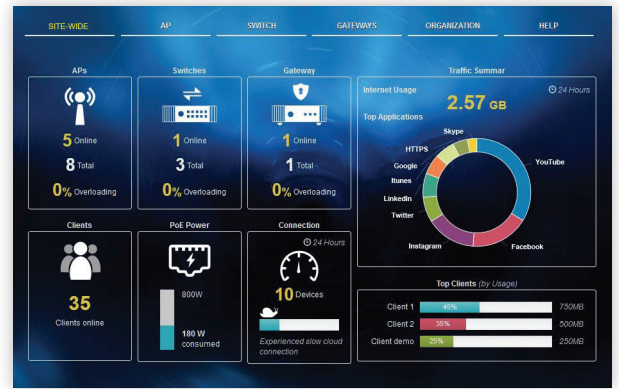
The Zyxel Nebula NAP203 delivers optimized wireless experience for users with comprehensive wireless features such as Dynamic Channel Selection (DCS), Load Balancing, and Smart Client Steering, etc. DCS avoids interference from co-channeling and overlapping channels continuously, while Load Balancing and Smart Client Steering which features Band Select and Balance for more spectrum to provide more stable, reliable wireless connections.

## Enterprise-class security

The Zyxel Nebula NAP203 inherits the NETCONF protocol for secure configuration changes. In terms of authentication and data encryption, it supports WPA2 enterprise protection and a wide range of Extensible Authentication Protocol (EAP) types, including EAP SIM for smartphones. Besides, the NAP203 also features access control and Layer-2 isolation for privacy protection. The comprehensive security features ensure NAP203 to deliver enterprise-grade protection to the entire network.

## Ultra-slim exterior design

Zyxel Nebula NAP203's ultra-slim exterior (32 mm in height) and understated white color blend perfectly into all kinds of decorations in various buildings with extraordinary modern tastes. The compact, elegant aesthetics makes NAP203 suitable for different decors no matter it's meant to be visible or not.



Real-time control of all the devices through a single pane of glass



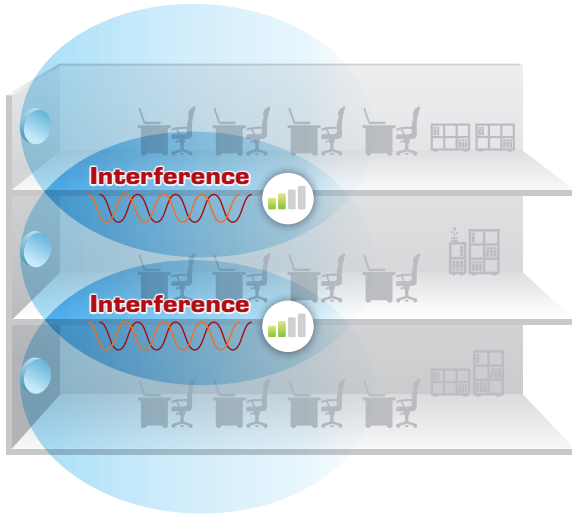
Monitor AP usage and client report by different time intervals and view historical status record via the intuitive management interface

## Dual-optimized Antenna

The unprecedented Dual-optimized Antenna is an adjustable internal antenna with “just fit” pattern options optimized for wall- or ceiling-mount that the installation technician can instantly change the antenna pattern simply via the physical antenna switch without booting the device. If needed, administrators can base on their know-how to perform granular signal optimization per floor plan via software configuration remotely. With the flexibility, the NAP203 can fit for wall-mount or ceiling-mount deployment without the hassles of antenna accessory selection and signal coverage adjustment.

### Traditional (Side View)

Pattern for wall-mount (H-plane, side view)



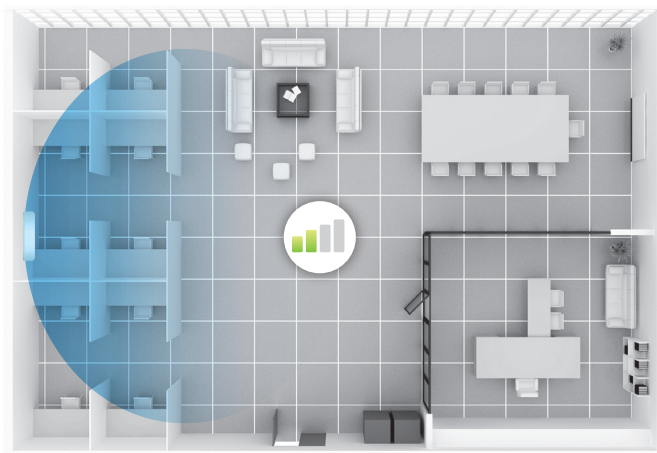
### Dual-optimized (Side View)

Pattern for wall-mount (H-plane, side view)



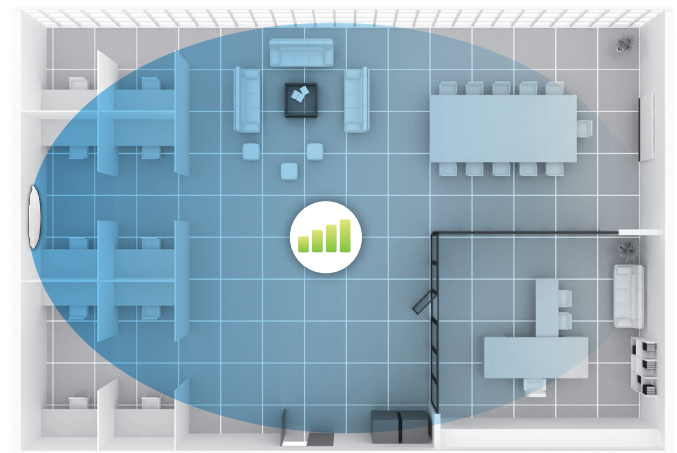
### Traditional (Top View)

Pattern for wall-mount (E-plane, top view)



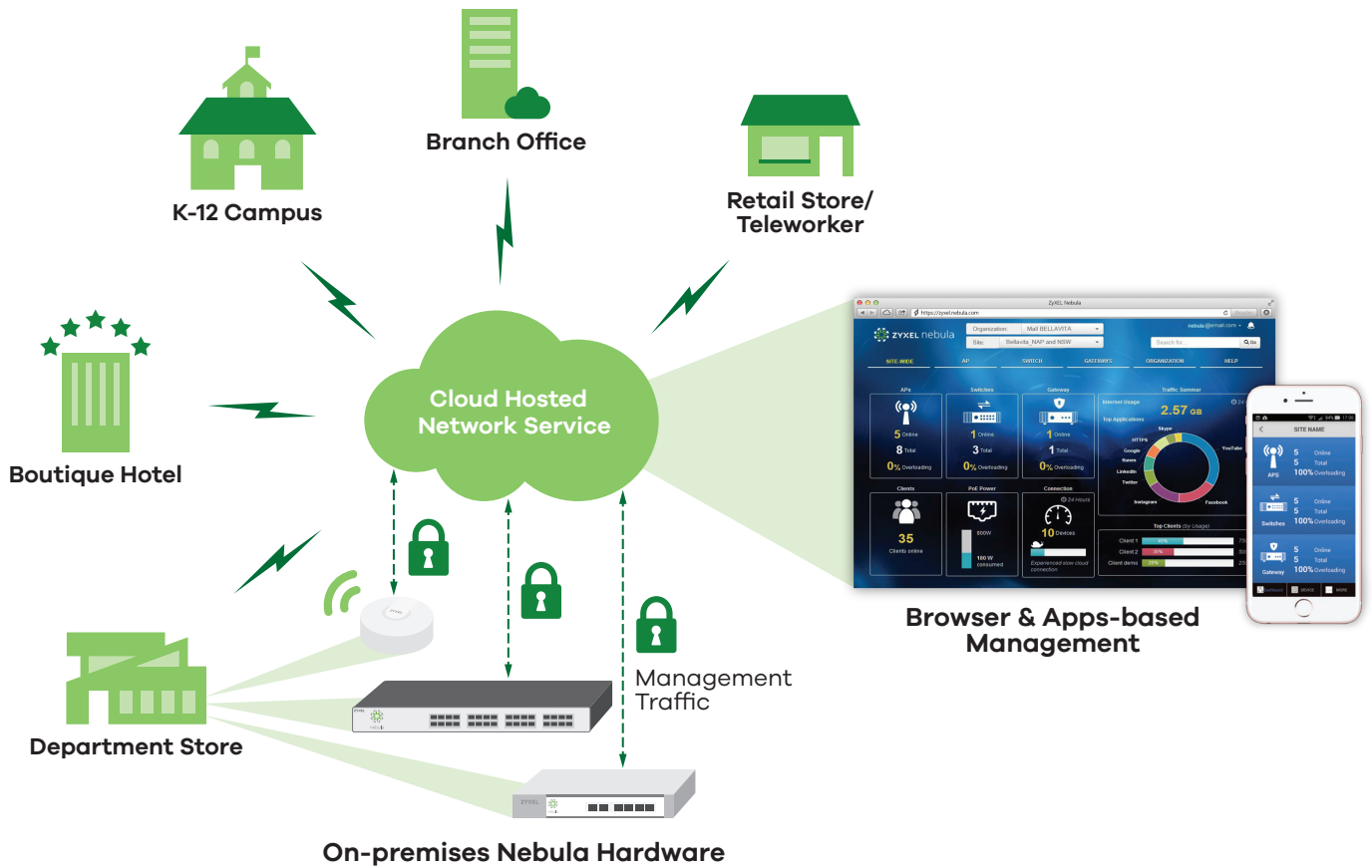
### Dual-optimized (Top View)

Pattern for wall-mount (E-plane, top view)

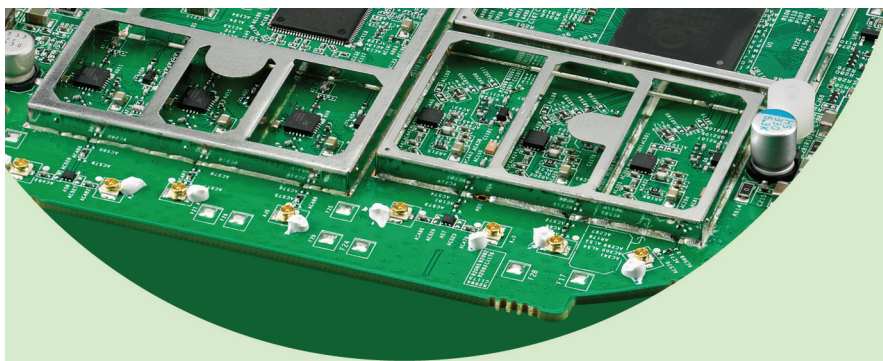


# Applications Diagram

## Nebula cloud management architecture

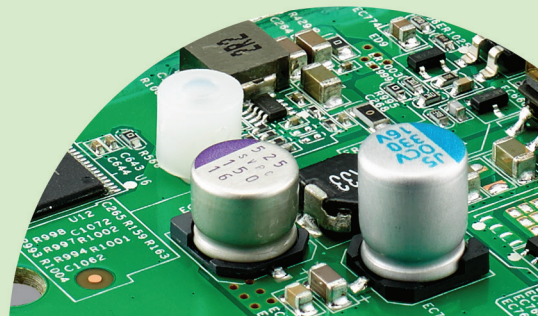


## Robust Hardware



### Solid capacitor for longevity

All-solid capacitor design provides up to 6 times lifespan than electrolytic capacitors that delivers better stability and reliability.




### Fine art of RF design

Noises between RF circuits usually impact performance, and it's a critical EMI challenge too. The NAP203 isolates RF circuits by solid shielding frames. Thus, electromagnetic interference (EMI) is mitigated while RF performance is enhanced as well.



# Specifications

<b>Model</b>		<b>NAP203</b>
<b>Product name</b>		802.11ac Dual-Radio, Dual-Optimized Antenna 3x3 Nebula Cloud Managed Access Point
		
<b>RF Specifications</b>		
<b>Frequency band</b>	2.4 GHz (IEEE 802.11 b/g/n) <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> <li>• Taiwan (TW): 2.412 to 2.462 GHz</li> </ul>	5 GHz (IEEE 802.11 a/n/ac) <ul style="list-style-type: none"> <li>• USA (FCC): 5.15 to 5.35 GHz; 5.725 to 5.850 GHz</li> <li>• Europe (ETSI): 5.15 to 5.35 GHz; 5.470 to 5.725 GHz</li> <li>• Taiwan (TW): 5.15 to 5.35 GHz; 5.725 to 5.850 GHz</li> </ul>
<b>802.11n/ac premium features</b>	<ul style="list-style-type: none"> <li>• 3x3 Multiple-Input Multiple-Output (MIMO) with three spatial streams</li> <li>• Maximal Ratio Combining (MRC)</li> <li>• 20-, 40- and 80-Mhz channels</li> <li>• Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx)</li> </ul>	<ul style="list-style-type: none"> <li>• Cyclic Delay Diversity (CSD) support</li> <li>• Maximum Likelihood Demodulation (MLD) support</li> <li>• Low Density Parity Check (LDPC) support</li> </ul>
<b>Conducted typical transmit output power (dBm)</b>	<b>FCC 11b/g</b>	27
	<b>FCC 11g/n</b>	26
	<b>FCC 11a</b>	27
	<b>FCC 11n/a (ac)</b>	27
	<b>EU 11b/g</b>	18
	<b>EU 11g/n</b>	18
	<b>EU 11a</b>	22
	<b>EU 11n/a (ac)</b>	24
<b>Antenna system</b>	Dual-optimized internal antenna	
<b>Antenna gain</b>	Ceiling: 2.4 GHz 3 dBi; 5 GHz 4 dBi Wall: 2.4 GHz 4 dBi; 5 GHz 5 dBi	
<b>Support data rate</b>	<ul style="list-style-type: none"> <li>• 802.11 a/g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps</li> <li>• 802.11n: up to 450 Mbps in MCS23 (40 MHz)</li> <li>• 802.11ac: up to 1300 Mbps in MCS9 (80 MHz)</li> </ul>	
<b>Receive sensitivity</b>	Min. Rx sensitivity up to to -102 dBm	
<b>Interfaces</b>		
<b>Number of 10/100/1000M LAN</b>	2	
<b>Console port</b>	4-Pin serial	
<b>PoE</b>	Yes	
<b>PoE power draw</b>	12.48 W (802.3at PoE)*	
<b>Wireless Security</b>		
<b>WEP</b>	Yes	
<b>WPA/WPA2-PSK</b>	Yes	
<b>WPA/WPA2-Enterprise</b>	Yes	
<b>WLAN access control list</b>	Yes	
<b>EAP types</b>	EAP-TLS, EAP-TTLS, EAP-PEAP, EAP-FAST, EAP-AKA and EAP-SIM	
<b>IEEE 802.1X</b>	Yes	

\* Max. power draw is 12.48 W. In extreme cases, the inrush current is greater than 802.3af limit, thus 802.3at PoE is required.

Wireless Security		
Number of SSID		8 (per radio)
MAC filtering		Yes
Layer-2 isolation		Yes
RADIUS authentication		Yes
Captive portal		Yes
Network		
VLANs		Yes
DHCP client		Yes
QoS (PG)		
WMM		Yes
WMM power save		Yes
DiffServ marking		Yes
Management		
Cloud managed		Yes
ZON utility		Support
Smart connect		Neighbor device discovery
Others		
Plenum rating		Yes
Input power		802.3at PoE only (No DC jack)
MTBF (hr)		1,005,235
Standard Compliance		
Ethernet		IEEE 802.3, IEEE 802.3u, IEEE 802.11ab, IEEE 802.3au IEEE 802.3az, IEEE 802.3at
PoE		IEEE 802.3af
WLAN		<ul style="list-style-type: none"> <li>• 802.11b: DBPSK, DQPSK, CCK</li> <li>• 802.11g: BPSK, QPSK, 16-QAM, 64-QAM</li> <li>• 802.11a: BPSK, QPSK, 16-QAM, 64-QAM</li> <li>• 802.11n: BPSK, QPSK, 16-QAM, 64-QAM</li> <li>• 802.11ac: BPSK, QPSK, 64-QAM, 256-QAM</li> </ul>
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		EN 60950-1, IEC 60950-1, BSMI CNS14336-1
Physical Specifications		
Item	Dimensions (WxDxH)(mm/in.)	203.9 x 191.7 x 34.7/8.03 x 7.55 x 1.37
	Weight (g/lb.)	445/0.98
Packing	Dimensions (WxDxH)(mm/in.)	235 x 246 x 60/9.25 x 9.69 x 2.36
	Weight (g/lb.)	938/2.07
Included accessories		Wall/Ceiling-mount plate
Environmental Specifications		
Operating	Temperature	0°C to 50°C/32°F to 122°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)

For more product information, visit us on the web at [www.zyxel.com](http://www.zyxel.com)

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Datasheet NAP203



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