Dual Band 802.11ax 3000Mbps Ceiling-mount Wireless Access Point w/802.3at PoE+ and 2 10/100/1000T LAN Ports



Ultra-high-speed Wi-Fi 6 Wireless LAN Solution

PLANET WDAP-C3000AX **3000Mbps Dual Band 802.11ax Wireless AP**, supporting **Wi-Fi MESH**, **MU-MIMO**, **OFDMA**, **Seamless Roaming**, B**eamforming and BSS Coloring technology**, provides a maximum wireless speed of 2400Mbps in the 5GHz band and 600Mbps in the 2.4GHz band. The maximum number of client users is up to 256, ensuring more secure and robust connectivity with the adoption of Wi-Fi 6 technology.



Benefits of MU-MIMO, OFDMA, Seamless Roaming, Beamforming and BSS Coloring

The WDAP-C3000AX can be installed in public areas such as hotspots, airports and conferences as OFDMA, a multi-user version of OFDM, enables the concurrent AP to communicate (uplink and downlink) with multiple clients by assigning subsets of subcarriers called resource units (RUs) to the 0 clients. With MU-MIMO and Seamless Roaming technologies, it provides a better Wi-Fi user experience, reducing the likelihood of users turning off Wi-Fi and putting more load on the cellular network. Beamforming is to improve your Wi-Fi signal when you are far away from your router. The BSS color is a numerical identifier of the BSS. 802.11ax radios are able to differentiate between BSSs using BSS color identifier when other radios transmit on the same channel.

These technologies also can solve Wi-Fi congestion issues in open work spaces and conference rooms. The WDAP-C3000AX can offer more powerful throughput coverage of up to 256 client users.

Industrial Compliant Wireless LAN

- Compliant with the IEEE 802.11a/b/g/n/ac/ax wireless technology
- Equipped with 10/100/1000Mbps RJ45 ports, and auto MDI/MDI-X

RF Interface Characteristics

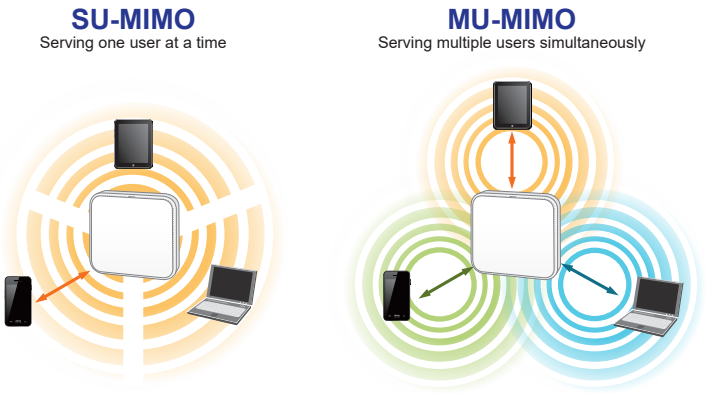
- 802.11ax 2T2R architecture with data rate of up to 3000Mbps (600Mbps in 2.4GHz and 2400Mbps in 5GHz)
- High output power with multiply-adjustable transmit power control

Multiple Operation Modes and Wireless Features

- Multiple operation modes: AP, gateway and repeater
- Supports OFDMA (orthogonal frequency division multiple access)
- Supports MU-MIMO (multi-user multiple-input multiple-output), Beamforming and BSS Coloring
- WMM (Wi-Fi multimedia) provides higher priority to multimedia transmitting over wireless
- Coverage threshold to limit the weak signal of clients occupying session
- Real-time Wi-Fi channel analysis chart and client limit control for better performance
- Support Terminal Seamless Roaming with 802.11k, 802.11v, and 802.11r
- Supports Mesh connection (The maximum number of Mesh supported device is 6 pcs.)

Secure Network Connection

- Full encryption supported: WPA3 Personal, WPA2/WPA3 Personal, WPA2 Personal (AES), WPA2 Personal (TKIP), WPA2 Personal (TKIP+AES), WPA/WPA2 Personal (AES), WPA/WPA2 Personal (TKIP), WPA/WPA2 Personal (TKIP+AES), WPA2 Enterprise, WPA/WPA2 Enterprise
- Supports 802.1Q port VLAN Supports IP/Port/MAC address/URL filtering, DoS, SPI firewall
- Supports DMZ and port forwarding
- Bandwidth control per IP address to increase network stability

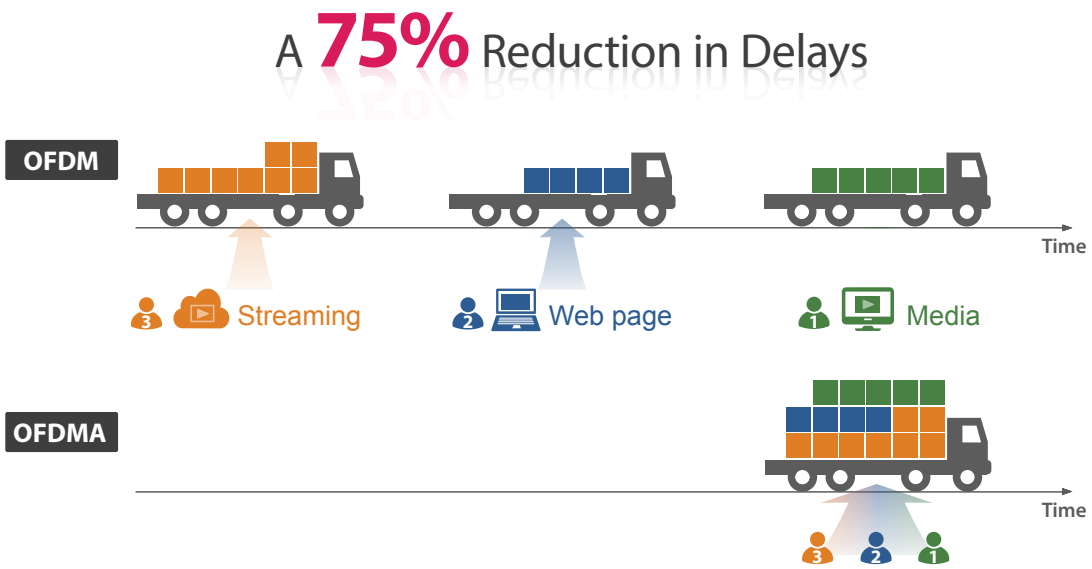


Easy Deployment and Management

- Support management by PLANET CloudViewer and CloudViewerPro app
- Supports PLANET AP Controllers in AP mode
- Easy discovery by PLANET Smart Discovery
- Self-healing mechanism through system auto reboot setting
- System status monitoring through remote syslog server
- Gateway mode supports PLANET DDNS/Easy DDNS, Captive Portal, RADIUS Server/Client

■ OFDMA (Orthogonal Frequency Division Multiple Access) Benefits

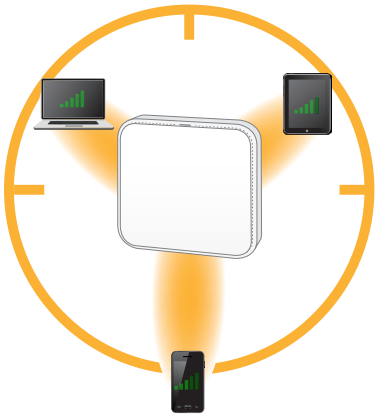
- Helps transmit small and large packets together to reduce bandwidth burden and improve data transmission performance
- Transmitting data at the same time can effectively reduce the transmission delay for longer frame and low-speed transmission.
- Improves the overall traffic quality, and effectively uses bandwidth in an environment where multiple people use the Internet.
- Increases the number of devices that can be connected to the AP.
- Reduces the power consumption of the device by way of the use of low bandwidth.



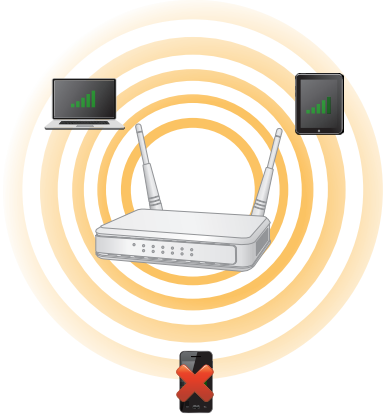
■ Beamforming

Beamforming is to improve your Wi-Fi signal when you are far away from your router. When you use beamforming, Wi-Fi beamforming narrows the focus of that router signal, sending it directly to your devices in a straight line, thus minimizing surrounding signal interference and increasing the strength of the signal that ultimately bring you the following benefits:

- Extend your Wi-Fi coverage
- Deliver a more stable Wi-Fi connection
- Deliver better Wi-Fi throughput
- Reduce router interference



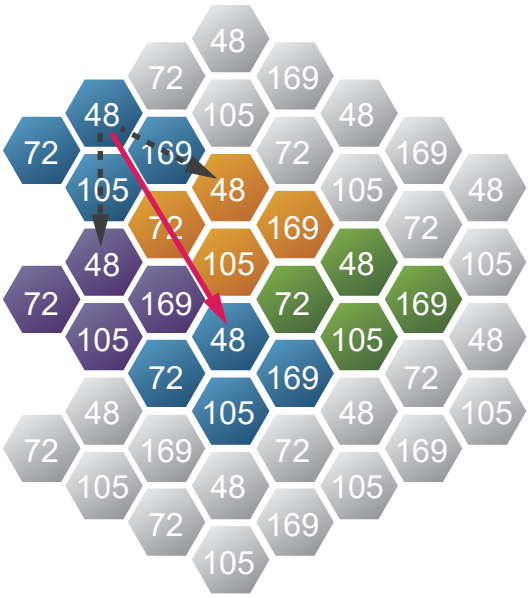
Dedicated and stable signals



Signal loss

■ **BSS Coloring**

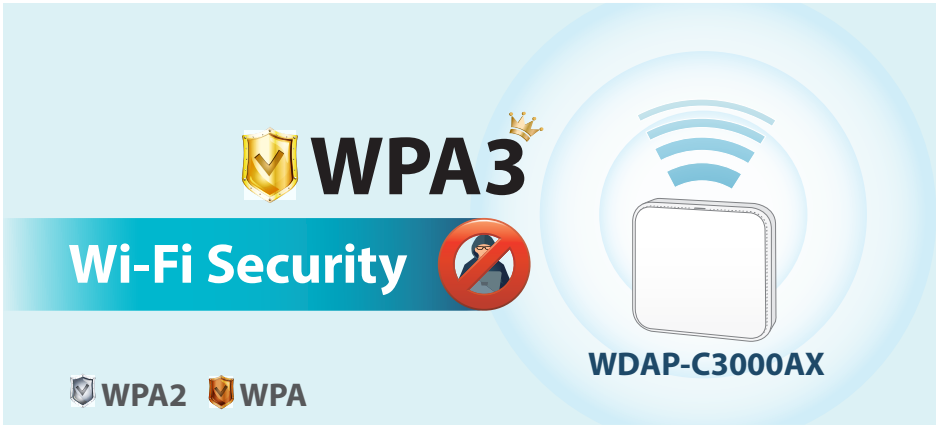
The BSS color is a numerical identifier of the BSS. 802.11ax radios that are able to differentiate between BSSs using BSS color identifier when other radios transmit on the same channel. If the color is the same, this is considered to be an intra-BSS frame transmission. In other words, the transmitting radio belongs to the same BSS as the receiver. If the detected frame has a different BSS color from its own, then the STA considers that frame as an inter-BSS frame from an overlapping BSS.



WPA3 Next Generation Security for Your WLAN Solution

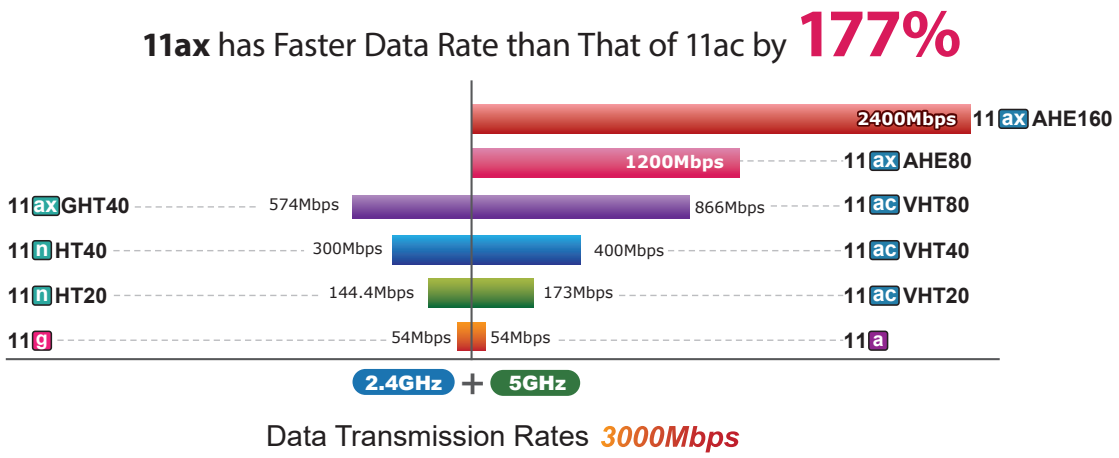
WPA3 is the next generation Wi-Fi security technology that provides the most advanced security protocol to the market. WPA3 makes your connection more secure by preventing hackers from easily cracking your password no matter how simplified the password is. WPA3 can also provide more reliable password-based authentication, so it can better protect the security of individual users.

* WDAP-C3000AX only supports WPA3-Personal.



Super Power Dual band WLAN Solution

PLANET WDAP-C3000AX, adopting the IEEE 802.11ax Wi-Fi 6 standard, provides a high-speed transmission. The maximum wireless speed in 2.4GHz band is up to 11AX of 574Mbps, and in the 5GHz band is up to 11AX of 2402Mbps. Both the **2.4GHz** and **5GHz** wireless connections can also be used simultaneously.

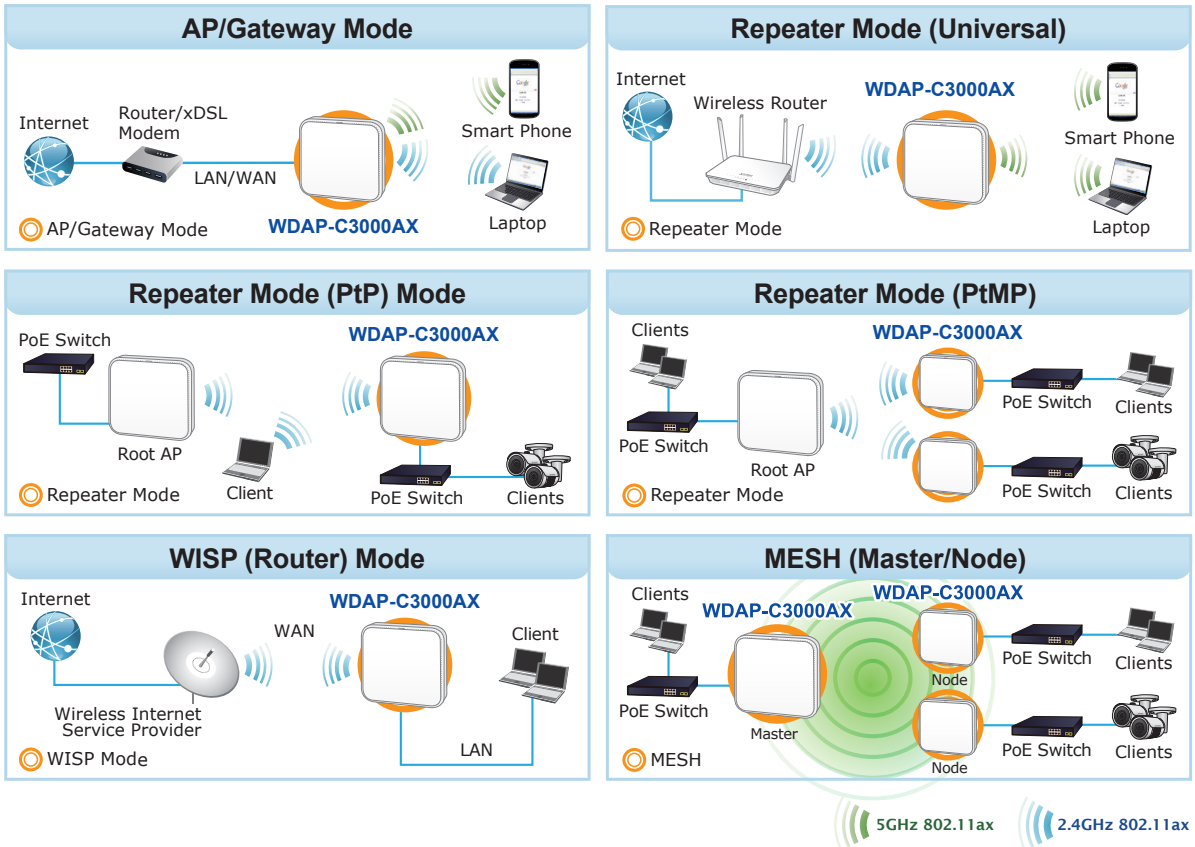


Advanced Security and Rigorous Authentication

The WDAP-C3000AX supports WPA/WPA2/WPA3 wireless encryptions, and also supports the WPA2 Enterprise, and WPA/WPA2 Enterprise, which can effectively prevent eavesdropping by unauthorized users or bandwidth occupied by unauthenticated wireless access. Furthermore, any users are granted or denied access to the wireless LAN network based on the ACL (Access Control List) that the administrator pre-established.

Multiple Operation Modes for Various Applications

The WDAP-C3000AX supports the simplified usage modes of AP, Gateway and Repeater, through which they provide more flexibility for users when wireless network is established. Compared with general wireless access points, the WDAP-C3000AX offers more powerful and flexible capability for wireless clients.



Optimized Efficiency in AP Management with Cloud and NMS system

Via the PLANET CloudViewerPro app, you can monitor and control Access Points in real time without a specified location and time limitation. The brand-new GUI configuration wizard helps the system administrator easily set up the WDAP-C3000AX step by step. Besides, the built-in Wi-Fi analyzer provides real-time channel utilization to prevent channel overlapping to assure greater performance. With the automatic transmission power mechanism, distance control and scheduling reboot setting, the WDAP-C3000AX is easy for the administrator to deploy and manage without on-site maintenance. Moreover, you can use PLANET NMS-500 or NMS-1000V AP control function to deliver wireless profiles to multiple APs simultaneously, thus making the central management simple.



Mesh Wi-Fi for More Hassle-free Network

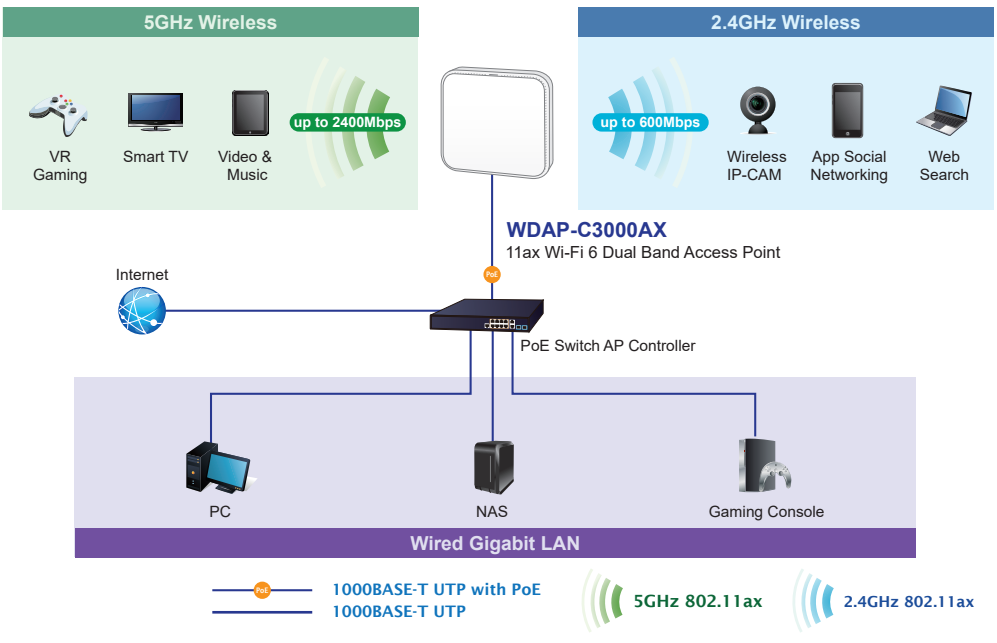
WDAP-C3000AX supports Mesh, which is an open standard wireless networking technology that enhances Wi-Fi coverage and stability. It allows different brands of routers and Wi-Fi devices to work together seamlessly, providing a unified network experience. Mesh supports multiple frequency bands, fast roaming, and intelligent management for optimal performance. With its easy setup and automated configuration, users can enjoy extended coverage and a reliable Wi-Fi connection throughout their homes or offices. Mesh is a convenient solution for those seeking improved Wi-Fi coverage and a hassle-free network setup.

(The maximum number of Mesh supported device is 6 pcs.)

Applications

Extreme High Speed and Wi-Fi 6 Technology Make Wireless Transmission More Powerful

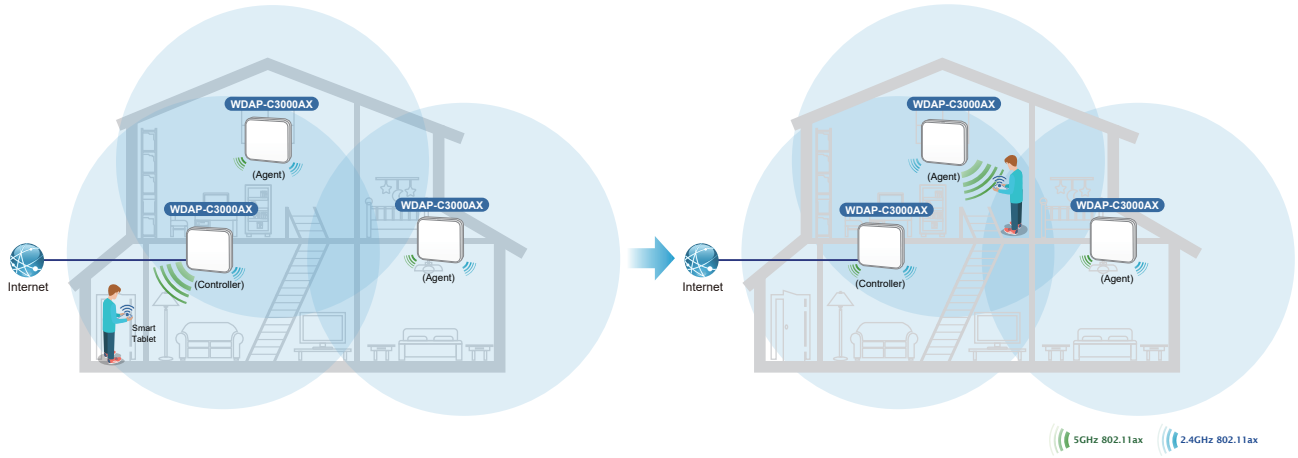
The WDAP-C3000AX delivers the dual-band and more bandwidth to avoid signal interference and ensure the best Wi-Fi performance. It allows you to check e-mails and surf the Internet via the 2.4GHz band and simultaneously watch full high-definition (HD) video or any other multimedia application via one 5GHz band. Besides, many client users can be connected to Wi-Fi at the same time. The maximum number of client users is up to 256. Moreover, the Gigabit Ethernet port of the WDAP-C3000AX offers ultra-fast wired connections that utilize the maximum wireless bandwidth; therefore, users will experience a fast wireless speed of over 700Mbps. With the outstanding stability of high-speed wireless transmission, the WDAP-C3000AX can provide users with excellent experience in multimedia streaming with your mobile devices anywhere, anytime.



Mesh Wi-Fi and Seamless Roaming for Better Coverage

Moving between a traditional Wi-Fi AP or router and range extender, your Wi-Fi signal can experience lag or a dropped connection. Mesh Wi-Fi comes with four features, including Seamless Roaming, Band Steering, Self-Healing, and Client Steering. A set of packages usually includes three to four APs. Each AP is an independent router. When the main AP functions, other APs are used as satellite APs. The whole system can provide Wi-Fi network connection with zero dead angle, meaning a large area is covered.

Its characteristic is not like the traditional star-shaped or tree-shaped network structure which can only communicate with the upper and lower access points, but each access point can connect and communicate with each other, and at the same time, it can automatically find the best path for transmitting packets. This enables your networking environment to get full coverage and efficient performance.



Specifications

Product	WDAP-C3000AX
Hardware Specifications	
Interfaces	LAN 2 x 10/100/1000BASE-T RJ45 port Auto-negotiation and auto MDI/MDI-X
Antennas	Gain: 4 x Internal 4dBi antenna (2.4G x2, 5G x2)
Reset Button	Reset button on the rear side (Press over 5 seconds to reset the device to factory default)
LED Indicators	Power, SYS
Dimensions (W x D x H)	168 x 168 x 32 mm
Weight	380 ± 5g
Power Requirements	48V DC IN, 0.5A, IEEE 802.3at PoE+ (WAN/PoE were changed port) 12V DC IN, 1.5A from DC Jack (5.5 x 2.1mm)
Power Consumption	< 15W
Mounting	Ceiling Mount
Wireless Interface Specifications	
Standard	IEEE 802.11ax IEEE 802.11ac IEEE 802.11n IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11i IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3ab 1000BASE-T IEEE 802.3x flow control IEEE 802.11k, 802.11v, and 802.11r
Media Access Control	CSMA/CA
Data Modulation	802.11ax: MIMO-OFDMA (BPSK / QPSK / 16QAM / 64QAM / 256QAM, 1024QAM) 802.11ac: MIMO-OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) 802.11a/g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11b: DSSS (DBPSK / DQPSK / CCK)

Band Mode	2.4GHz / 5GHz concurrent mode
Frequency Range	**2.4GHz:** FCC: 2.412~2.462GHz ETSI: 2.412~2.472GHz **5GHz:** FCC: 5.180~5.240GHz, 5.745~5.825GHz ETSI: 5.180~5.700GHz
Operating Channels	**ETSI:** 2.4GHz: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 (13 Channels) 5GHz: 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120,124,128,132, 136, 140 (19 Channels) **FCC:** 2.4GHz: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 (11 Channels) 5GHz: 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116,120,124,128,132, 136, 140, 149, 153, 157, 161,165 (24Channels) 5GHz channel list may vary in different countries according to their regulations.

Max. Transmit Power (dBm)

FCC: up to 22 ± 1dBm
ETSI: < 19dBm (EIRP)

Network Mode	Data Rate	Max. Transmit Power (dBm)
2.4G Power		
802.11b	11M	22 ± 2
	1M	22 ± 2
802.11g	54M	19 ± 2
	6M	21 ± 2
802.11n HT20	MCS7	18 ± 2
	MCS0	20 ± 2
802.11n HT40	MCS7	18 ± 2
	MCS0	20 ± 2
802.11ax HT20	MCS11	16 ± 2
	MCS0	20 ± 2
802.11ax HT40	MCS11	16 ± 2
	MCS0	20 ± 2
5G Power		
802.11a	54M	19 ± 2
	6M	21 ± 2
802.11n HT20	MCS7	18 ± 2
	MCS0	20 ± 2
802.11n HT40	MCS7	18 ± 2
	MCS0	20 ± 2
802.11ac HT20	MCS7	17 ± 2
	MCS0	20 ± 2
802.11ac HT40	MCS7	17 ± 2
	MCS0	20 ± 2
802.11ac HT80	MCS9	17 ± 2
	MCS0	19 ± 2
802.11ax HT20	MCS11	16 ± 2
	MCS0	20 ± 2
802.11ax HT40	MCS11	16 ± 2
	MCS0	20 ± 2
802.11ax HT80	MCS11	16 ± 2
	MCS0	19 ± 2
802.11ax HT160	MCS11	14 ± 2
	MCS0	18 ± 2

Receive Sensitivity	**Network Mode**	**Data Rate**	**Receive Sensitivity (dBm)**
	2.4GHz		
	802.11b	1Mbps	-96
		11Mbps	-87
	802.11g	6Mbps	-93
		54Mbps	-75
	802.11n HT20	MCS0	-92
		MCS7	-73
	802.11n HT40	MCS0	-89
		MCS7	-70
	802.11ax HT20	MCS0	-92
		MCS11	-64
	802.11ax HT40	MCS0	-89
		MCS11	-61
	5GHz		
	802.11a	6Mbps	-90
		54Mbps	-75
	802.11n HT20	MCS0	-88
		MCS7	-73
	802.11n HT40	MCS0	-88
		MCS7	-63
	802.11ac HT20	MCS0	-88
		MCS7	-67
	802.11ac HT40	MCS0	-88
		MCS7	-64
	802.11ac HT80	MCS0	-88
		MCS9	-61
	802.11ax HT20	MCS0	-88
		MCS11	-62
	802.11ax HT40	MCS0	-88
		MCS11	-58
	802.11ax HT80	MCS0	-84
		MCS11	-55
	802.11ax HT160	MCS0	-82
		MCS11	-51
Software Features			
LAN	Static IP / Dynamic IP		
WAN	Static IP Dynamic IP PPPoE/PPTP/L2TP		
Wireless Mode	Access Point Gateway Repeater WISP Mesh (The maximum number of Mesh supported device is 6 pcs.)		
Channel Width	20MHz, 40MHz, 80MHz, 160MHz		
Encryption Security	WPA3 Personal, WPA2/WPA3 Personal, WPA2 Personal (AES), WPA2 Personal (TKIP), WPA2 Personal (TKIP+AES), WPA/WPA2 Personal (AES), WPA/WPA2 Personal (TKIP), WPA/WPA2 Personal (TKIP+AES), WPA2 Enterprise, WPA/WPA2 Enterprise		
Wireless Security	Enable/Disable SSID Broadcast Wireless Max. 32 MAC address filtering User Isolation		
Max. SSIDs	8 (4 per radio)		
Max. Clients	256 (200 is suggested, depending on usage)		
Wireless QoS	Supports Wi-Fi Multimedia (WMM)		
Wireless Advanced	Auto Channel Selection 5-level Transmit Power Control Max (100%), Efficient (75%), Enhanced (50%), Standard (25%) or Min (15%) Client Limit Control, Coverage Threshold Wi-Fi channel analysis chart Seamless Roaming Beamforming BSS Coloring		

Status Monitoring	Device status, wireless client List PLANET Smart Discovery DHCP client table System Log supports remote syslog server
VLAN	IEEE 802.1Q VLAN (VID: 1~4094) SSID-to-VLAN mapping to up to 4 SSIDs
Self-healing	Supports auto reboot settings per day/hour
Management	Remote management through PLANET DDNS/ Easy DDNS Configuration backup and restore Supports UPnP Supports IGMP Proxy Supports PPTP/L2TP/IPSec VPN Pass-through Supports Captive Portal, RADIUS Server/Client
Central Management	Applicable controllers: NMS APC, WS APC, VR/IVR APC, ICG APC, PLANET CloudViewer, PLANET CloudViewerPro
Environment & Certification	
Temperature	Operating: -20~ 55 degrees C Storage: -40 ~ 70 degrees C
Humidity	Operating: 10 ~ 90% (non-condensing) Storage: 5 ~ 95% (non-condensing)
Regulatory	CE, RoHS
Remarks [*]: The feature will be supported through firmware/system upgrade.	

Ordering Information

WDAP-C3000AX	Dual Band 802.11ax 3000Mbps Ceiling-mount Wireless Access Point w/802.3at PoE+ and 2 10/100/1000T LAN Ports

Related Wireless Products

WDAP-C7210E	1200Mbps 802.11ac Wave 2 Dual Band Ceiling-mount Wireless Access Point w/802.3at PoE+ and 2 10/100/1000T LAN Ports
WDAP-W1800AXU	Dual Band 802.11ax 1800Mbps In-wall Wireless Access Point w/802.3at PoE+ and Type C USB
WDAP-C1800AX	Dual Band 802.11ax 1800Mbps Ceiling-mount Wireless Access Point w/802.3at PoE+ & 2 10/100/1000T LAN Ports
WDAP-1800AX	Dual Band 802.11ax 1800Mbps Outdoor Wireless AP
WBS-900AC-KIT	5GHz 802.11ac 900Mbps TDMA Outdoor Long Range Wireless CPE Kit
NMS-500	Enterprise-class Universal Network Management Controller - 500 nodes, 5 10/100/1000T LAN Ports
NMS-1000V-12	Universal Network Management Controller with 12" LCD Touch Screen -- 1024 Nodes, 2 10/100/1000T LAN Ports
NMS-1000V-10	Universal Network Management Controller with 10" LCD Touch Screen -- 1024 Nodes, 2 10/100/1000T LAN Ports
WS-1032P	Wireless AP Managed Switch with 8-Port 802.3at PoE + 2-Port 10G SFP+
VR-300P	Enterprise 4-Port 10/100/1000T 802.3at PoE + 1-Port 10/100/1000T VPN Security Router
IVR-300FP	Industrial 4-Port 10/100/1000T 802.3at PoE + 1-Port 10/100/1000T + 1-Port 1000X SFP VPN Security Gateway
ICG-2515W-NR	Industrial 5G NR Cellular Wireless Gateway with 5-Port 10/100/1000T

PLANET Technology Corporation

11F., No.96, Minquan Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)

Tel: 886-2-2219-9518 Fax: 886-2-2219-9528

Email: sales@planet.com.tw www.planet.com.tw

PLANET reserves the right to change specifications without prior notice. All brand names and trademarks are property of their respective owners. Copyright © 2023 PLANET Technology Corp. All rights reserved.