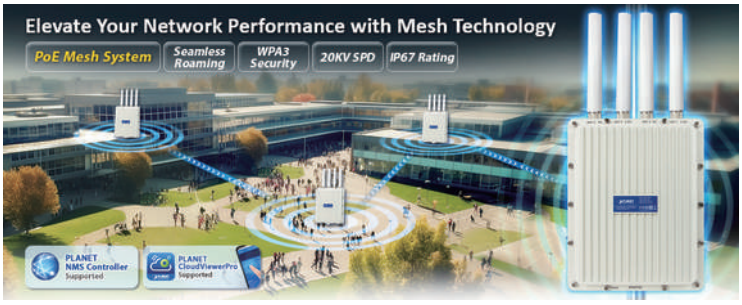
Dual Band 802.11ax 3000Mbps Outdoor Wireless AP



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

- PLANET's WDAP-3000AX is a high-performance Dual Band 802.11ax Wireless Access Point (AP) designed to deliver blazing-fast Wi-Fi speeds and advanced features. With support for **Wi-Fi Mesh**, **MU-MIMO**, **OFDMA**, **Seamless Roaming**, **Beamforming**, **and BSS Coloring** technology, this AP ensures a seamless and efficient wireless experience.
- In the **5GHz** band, it offers an impressive maximum wireless speed of **2400Mbps**, while in the **2.4GHz** band, it provides **600Mbps** of speed. This dual-band capability ensures reliable connectivity for various devices.
- One of the standout features of the WDAP-3000AX is its rugged build. Encased in an **IP67-rated aluminum case**, it's safeguarded against dust and water, making it suitable for deployment in harsh outdoor environments. Additionally, the flexible **N-type connectors** allow system integrators to easily set up high-gain antennas for long-distance outdoor applications, even in rough weather conditions.
- To enhance product durability further, the WDAP-3000AX includes **20KV surge protection** for wired cable interfaces, safeguarding against electrical surges and ensuring stable operation.

With support for **up to 256 client users**, this AP is well-suited for high-density environments, providing secure and robust connectivity. Its adoption of Wi-Fi 6 technology ensures optimal performance and efficiency, making it an excellent choice for businesses and organizations that demand top-tier wireless capabilities.



Hardware

- 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
- One reset button and power LED indicator

RF Interface Characteristics

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

Outdoor Environmental Characteristics

- IP67 rating, IEEE 802.3at PoE design
- Rugged protection with aluminum extrusion case and ground terminal
- 20KV surge protection for wire cable interface
- Operating temperature: -40~70 degrees C

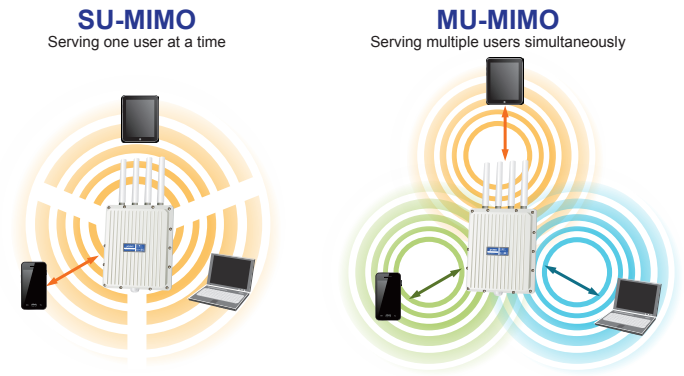
Multiple Operation Modes and Wireless Features

- 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.)

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

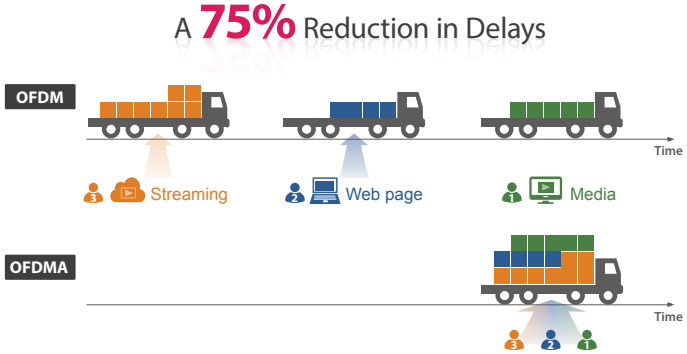
The WDAP-3000AX can be installed in public areas such as hotspots, airports and conferences as OFDMA, a multi-user version of OFDM, enables the concurrent AP to communicate (uplink and downlink) with multiple clients by assigning subsets of subcarriers called resource units (RUs) to the 0 clients. With 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-3000AX can offer more powerful throughput coverage of up to 256 client users.



■ 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.



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

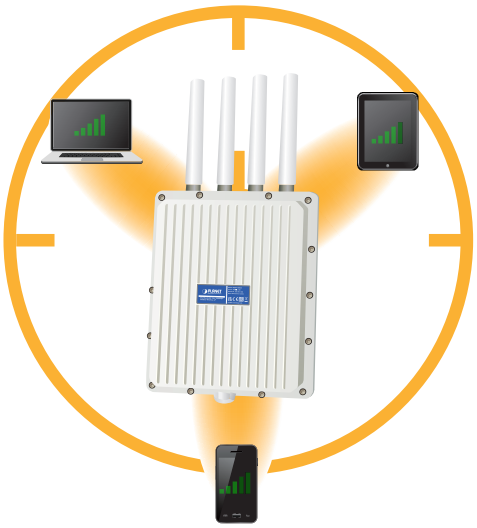
Easy Deployment and Management

- 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

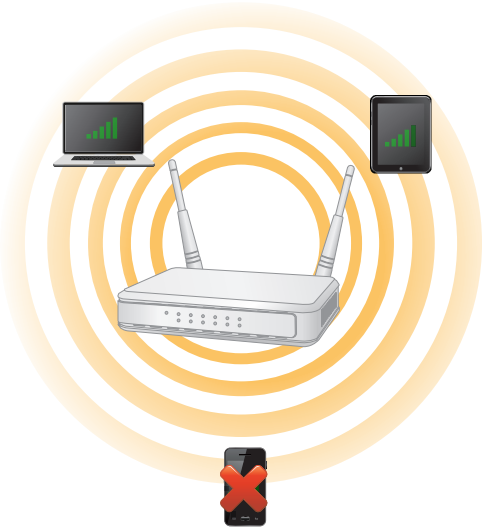
■ Beamforming

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



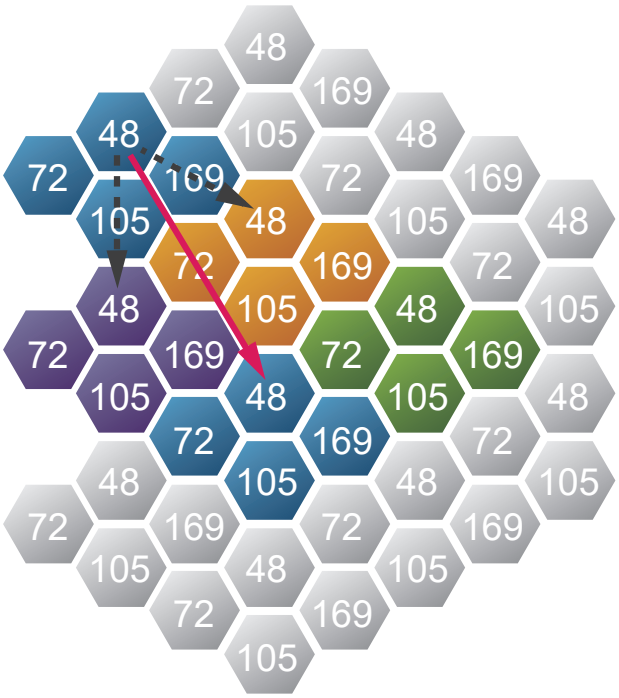
Dedicated and stable signals



Signal loss

■ BSS Coloring

The BSS color is a numerical identifier of the BSS. 802.11ax radios 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

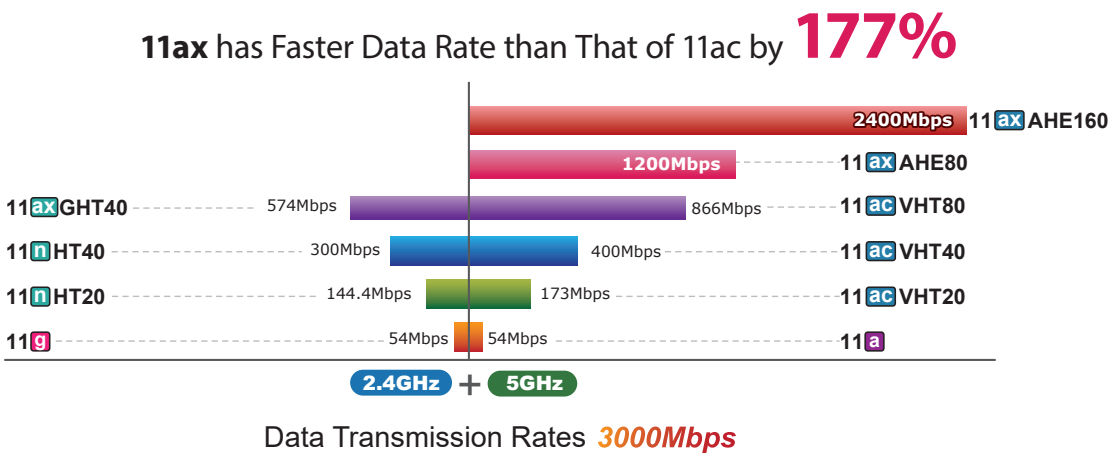
WPA3 is the next generation Wi-Fi security technology that provides the most advanced security protocol to the market. WPA3 makes your connection more secure by preventing hackers from easily cracking your password no matter how simplified the password is. WPA3 can also provide more reliable password-based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

* WDAP-3000AX only supports WPA3-Personal.



Super Power Dual band WLAN Solution

PLANET WDAP-3000AX, 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-3000AX supports WPA/WPA2/WPA3 wireless encryptions, and also supports the WPA2 Enterprise, 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.

Flexible, Durable and Reliable Outdoor Characteristics

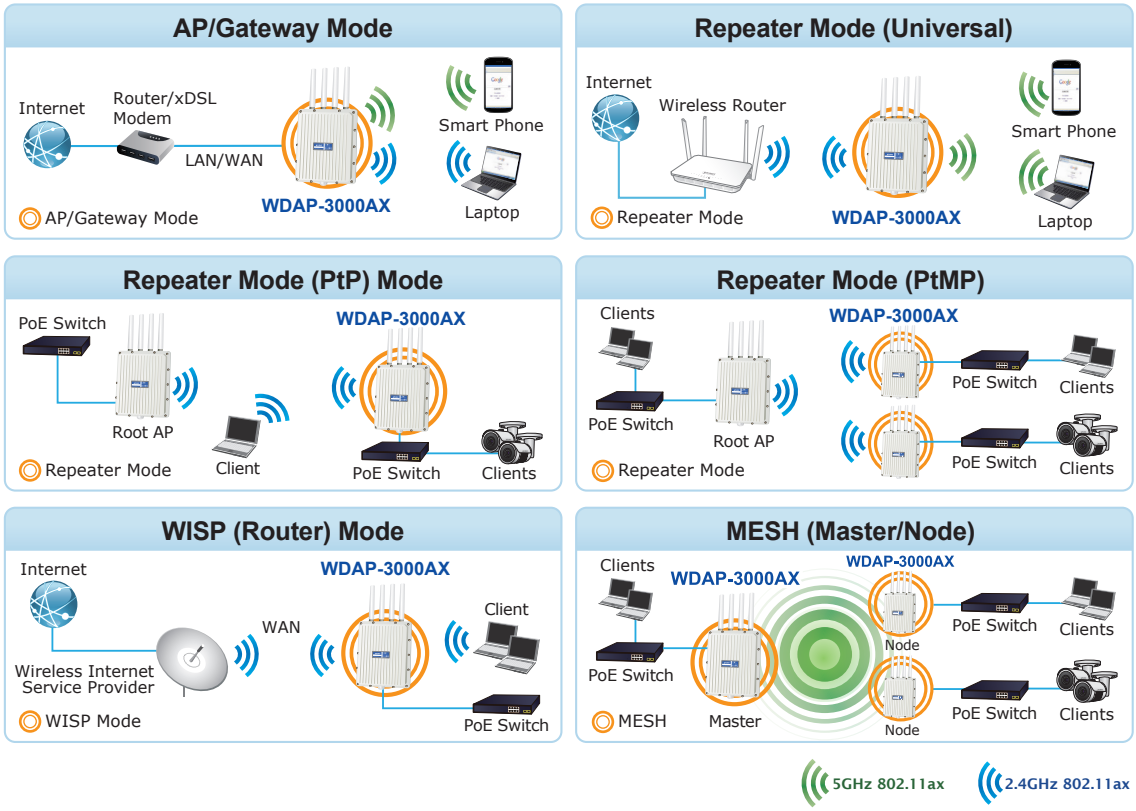
To reach maximum reliability in the harsh environment, the **WDAP-3000AX** comes with **IP67-rated Aluminum Die-cast Housing**, capable of withstanding wide temperature ranging from **-40 to 70** degrees C. The WDAP-3000AX includes **20KV surge protection** for wired cable interfaces, safeguarding against electrical surges and ensuring stable operation. Designed with the **IEEE 802.3at PoE+** (**P**ower **o**ver **E**thernet) power scheme, the **WDAP-3000AX** can be easily installed in the areas where power outlets are not available. Furthermore, it is also suitable to be integrated with PLANET Renewable Power PoE System to offer farther wireless service in remote areas.



Environmental Adaptations in Outdoor Area

Multiple Operation Modes for Various Applications

The WDAP-3000AX supports the simplified usage modes of AP, Gateway, Repeater and WISP mode, through which they provide more flexibility for users when wireless network is established. Compared with general wireless access points, the WDAP-3000AX offers more powerful and flexible capability for wireless clients.



Mesh Wi-Fi for More Hassle-free Network

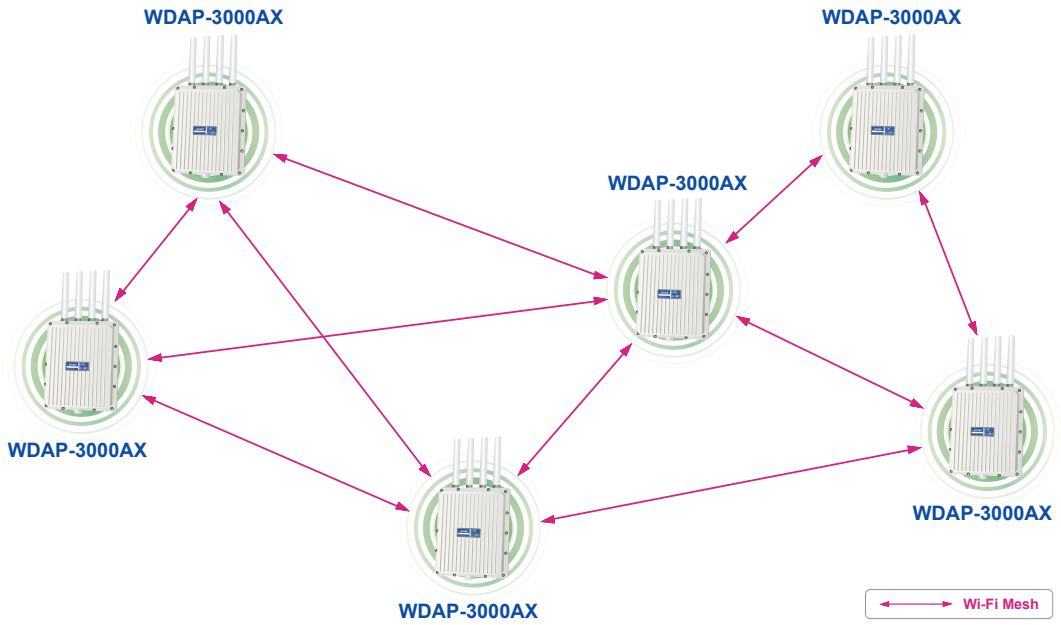
The WDAP-3000AX boasts support for **802.11s Mesh** technology, an open standard wireless networking solution that takes Wi-Fi coverage and stability to the next level. It enables seamless collaboration between various router and Wi-Fi device brands, creating a unified and efficient network experience.

Mesh technology leverages multiple frequency bands, enabling fast roaming and intelligent network management, resulting in top-notch performance. Setting up a Mesh network is a breeze, thanks to its user-friendly installation process and automated configuration. This ensures that users can enjoy extended Wi-Fi coverage and a consistently reliable connection across their homes or workplaces.

In summary, Mesh technology is the go-to solution for those seeking to enhance their Wi-Fi coverage without the headache of complex network setups. It's a convenient and effective way to achieve a seamless and robust wireless network.

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

Mesh Topology



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-3000AX 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-3000AX 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.

Home Dashboard for Wi-Fi Status



CloudViewerPro

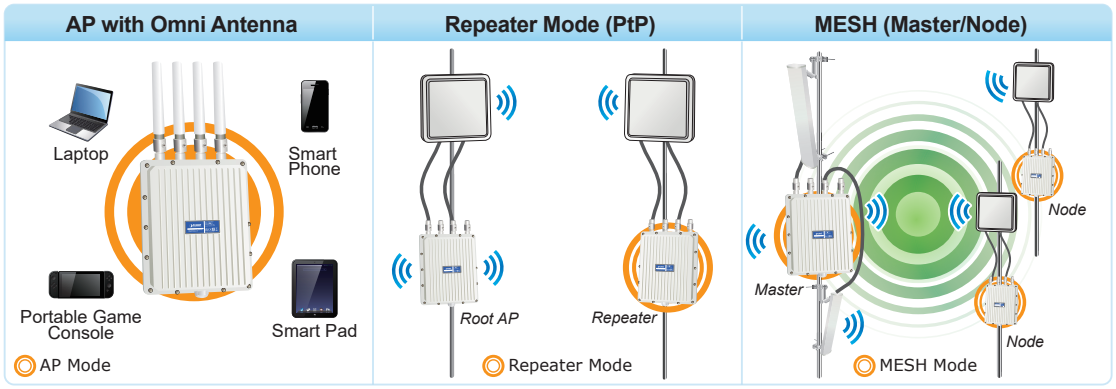
Setup Wizard for Multiple Modes

Applications

Robust Hardware and Flexible Dual RF for Various Outdoor Requirements

With high-power, long-distance, reliable and comprehensive characteristics, the WDAP-3000AX designed with durable and robust IP67 hardware architecture, and dramatic wireless efficiency is perfect for any outdoor network infrastructure. With higher gain antennas and dual RF design, the WDAP-3000AX is suitable for various applications. For example, the WDAP-3000AX can establish the backhaul link through the 5GHz radio and then relay the wireless signal through the 2.4GHz radio to provide internet service to rural residents. With the WDAP-3000AX, an outdoor wireless infrastructure in the harsh environment can be speedily deployed to reduce cabling cost and installation time.

Flexible Deployment with Various Antennas



**We recommend you to match the WDAP-3000AX with our related products to get the best results.

Specifications

Product	WDAP-3000AX
Hardware Specifications	
Interface	PoE WAN/LAN: 1 x 10/100/1000BASE-T, auto-MDI/MDIX, 802.3at PoE In
Antennas	Built-in four N-type connectors
Reset Button	Reset button (Press over 5 seconds to reset the device to factory default)
LED Indicators	Power
Dimensions (W x D x H)	231 x 80 x 295 mm
Weight	2527 g
Material	Aluminum
Power Requirements	48V 0.5A, IEEE 802.3at PoE+
Power Consumption	< 15W
Mounting	Mast mounting
IP Level	IP67
ESD Protection	±8kV air gap discharge ±4kV contact discharge
Surge Protection	±20kV
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

<table>
<tr><td>Data Modulation</td><td>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)</td></tr>
<tr><td>Band Mode</td><td>2.4GHz / 5GHz concurrent mode</td></tr>
<tr><td>Frequency Range</td><td>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</td></tr>
<tr><td>Operating Channels</td><td>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, 120,124,256
,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.</td></tr>
<tr><td>Max. Transmit Power (dBm)</td><td>FCC: up to 22 ± 1dBm
ETSI: < 19dBm (EIRP)
<table>
<tr><th>Network Mode</th><th>Data Rate</th><th>Max. Transmit Power (dBm)</th></tr>
<tr><td colspan="3">2.4GHz Power</td></tr>
<tr><td rowspan="2">802.11b</td><td>11M</td><td>22 ± 2</td></tr>
<tr><td>1M</td><td>22 ± 2</td></tr>
<tr><td rowspan="2">802.11g</td><td>54M</td><td>19 ± 2</td></tr>
<tr><td>6M</td><td>21 ± 2</td></tr>
<tr><td rowspan="2">802.11n HT20</td><td>MCS7</td><td>18 ± 2</td></tr>
<tr><td>MCS0</td><td>20 ± 2</td></tr>
<tr><td rowspan="2">802.11n HT40</td><td>MCS7</td><td>18 ± 2</td></tr>
<tr><td>MCS0</td><td>20 ± 2</td></tr>
<tr><td rowspan="2">802.11ax HT20</td><td>MCS11</td><td>16 ± 2</td></tr>
<tr><td>MCS0</td><td>20 ± 2</td></tr>
<tr><td rowspan="2">802.11ax HT40</td><td>MCS11</td><td>16 ± 2</td></tr>
<tr><td>MCS0</td><td>20 ± 2</td></tr>
<tr><td colspan="3">5G Power</td></tr>
<tr><td rowspan="2">802.11a</td><td>54M</td><td>19 ± 2</td></tr>
<tr><td>6M</td><td>21 ± 2</td></tr>
<tr><td rowspan="2">802.11n HT20</td><td>MCS7</td><td>18 ± 2</td></tr>
<tr><td>MCS0</td><td>20 ± 2</td></tr>
<tr><td rowspan="2">802.11n HT40</td><td>MCS7</td><td>18 ± 2</td></tr>
<tr><td>MCS0</td><td>20 ± 2</td></tr>
<tr><td rowspan="2">802.11ac HT20</td><td>MCS7</td><td>17 ± 2</td></tr>
<tr><td>MCS0</td><td>20 ± 2</td></tr>
<tr><td rowspan="2">802.11ac HT40</td><td>MCS7</td><td>17 ± 2</td></tr>
<tr><td>MCS0</td><td>20 ± 2</td></tr>
<tr><td rowspan="2">802.11ac HT80</td><td>MCS9</td><td>17 ± 2</td></tr>
<tr><td>MCS0</td><td>19 ± 2</td></tr>
<tr><td rowspan="2">802.11ax HT20</td><td>MCS11</td><td>16 ± 2</td></tr>
<tr><td>MCS0</td><td>20 ± 2</td></tr>
<tr><td rowspan="2">802.11ax HT40</td><td>MCS11</td><td>16 ± 2</td></tr>
<tr><td>MCS0</td><td>20 ± 2</td></tr>
<tr><td rowspan="2">802.11ax HT80</td><td>MCS11</td><td>16 ± 2</td></tr>
<tr><td>MCS0</td><td>19 ± 2</td></tr>
<tr><td rowspan="2">802.11ax HT160</td><td>MCS11</td><td>14 ± 2</td></tr>
<tr><td>MCS0</td><td>18 ± 2</td></tr>
</table></td></tr>
</table>

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	-92
		54Mbps	-74
	802.11n HT20	MCS0	-90
		MCS7	-73
	802.11n HT40	MCS0	-87
		MCS7	-70
	802.11ac HT20	MCS0	-91
		MCS7	-67
	802.11ac HT40	MCS0	-88
		MCS7	-63
	802.11ac HT80	MCS0	-84
		MCS9	-60
	802.11ax HT20	MCS0	-91
		MCS11	-62
	802.11ax HT40	MCS0	-89
		MCS11	-59
	802.11ax HT80	MCS0	-86
		MCS11	-56
	802.11ax HT160	MCS0	-83
		MCS11	-53
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	Mesh 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: -40~ 70 degrees C Storage: -40 ~ 70 degrees C
Humidity	Operating: 10 ~ 90% (non-condensing) Storage: 5 ~ 95% (non-condensing)
Regulatory	CE, RoHS

Ordering Information

WDAP-3000AX	Dual Band 802.11ax 3000Mbps Outdoor Wireless AP

Related Wireless Products

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

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