Dual Band 802.11ax 1800Mbps In-wall Wireless Access Point

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

PLANET WDAP-W1800AXU **1800Mbps Dual Band 802.11ax Wireless AP**, supporting **MU-MIMO**, **OFDMA (Orthogonal Frequency Division Multiple Access)**, Seamless Roaming, Beamforming and BSS Coloring technology, provides a maximum wireless speed of 1200Mbps in the 5GHz band and 600Mbps in the 2.4GHz band. The maximum number of client users is up to 150, ensuring more secure and robust connectivity with the adoption of Wi-Fi 6 technology.

Suitable for Any Room Installation without Spoiling Interior Design

Featuring attractive in-wall design, the WDAP-W1800AXU can be firmly installed into the wall via the standard 86 x 86 mm European outlet box, which makes electrical wiring invisible and convenient for room installation without affecting the original interior design. It is ideal for hotels, residences, hospitals and more to establish any kind of wireless network.

(86 x 86mm box not included)

Standard Compliant Hardware Interface

• 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

• USB Type-C Port supplies 5V 0.5A for battery charging

RF Interface Characteristics

• 802.11ax 2T2R architecture with data rate of up to 1800Mbps (600Mbps in 2.4GHz and 1200Mbps 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

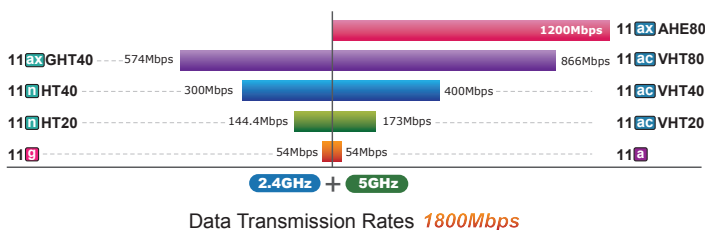• Supports Terminal Seamless Roaming with 802.11k, 802.11v, and 802.11r

Secure Network Connection

• Full encryption supported: WPA3 Personal, WPA2/WPA3 Personal, WPA2 Personal (AES), WPA2 Personal (TKIP), WPA2 Personal (TKIP+AES), WPA/WPA2 Personal

Super Power Dual band WLAN Solution

PLANET WDAP-W1800AXU, 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 1201Mbps. Both the **2.4GHz and 5GHz** wireless connections can also be used simultaneously.

11ax has Faster Data Rate than That of 11ac by **37%**

	1200Mbps	11 ax AHE80
11 ax GHT40 ---- 574Mbps	866Mbps	11 ac VHT80
11 n HT40 ---------- 300Mbps	400Mbps ----------	11 ac VHT40
11 n HT20 ---------- 144.4Mbps	173Mbps ----------	11 ac VHT20
11 g ---------- 54Mbps	54Mbps ----------	11 a

2.4GHz + **5GHz**

Data Transmission Rates *1800Mbps*

Benefits of MU-MIMO, OFDMA, Seamless Roaming, Beamforming and BSS Coloring
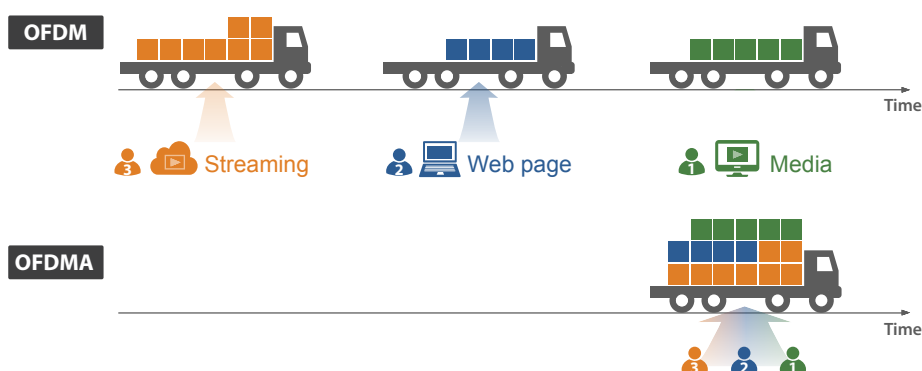
The WDAP-W1800AXU can be installed in public areas such as hotspots, airports and conferences as OFDMA, a multi-user version of OFDM, enables the concurrent AP to communicate (uplink and downlink) with multiple clients by assigning subsets of subcarriers called resource units (RUs) to the individual 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 that 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-W1800AXU can offer more powerful throughput coverage of up to 150 client users.

(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

- Supports PLANET AP Controllers in AP mode
- 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
- PLANET Smart Discovery Utility for deployment management
- PLANET NMS system and CloudViewer for deployment management

■ **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.

A **75%** Reduction in Delays

OFDM

Streaming   Web page   Media

Time

OFDMA

Time

SU-MIMO
Serving one user at a time

MU-MIMO
Serving multiple users simultaneously

■ 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
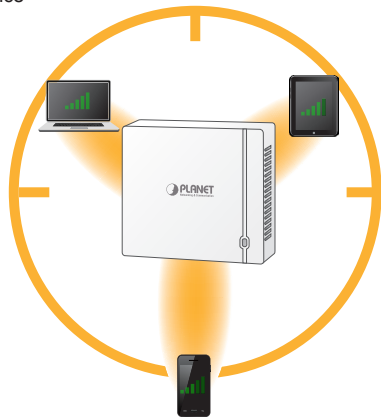
Dedicated and stable signals
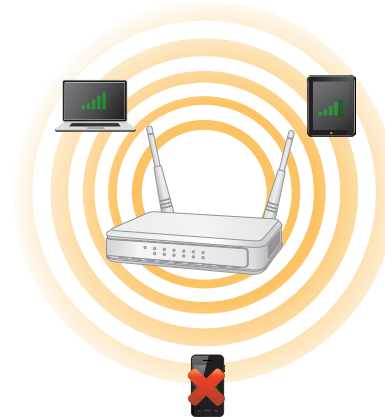
Signal loss

■ 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.
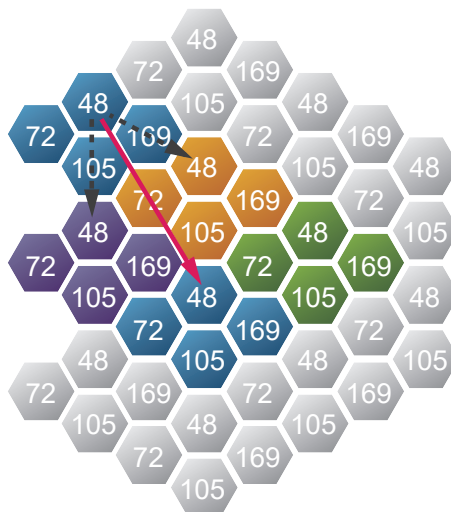
WPA3 Next Generation Security for Your WLAN Solution

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 simple the password is. WPA3 can also provide more reliable password-based authentication, so it can better protect the security of individual users.

* WDAP-W1800AXU only supports WPA3-Personal.

Advanced Security and Rigorous Authentication

The WDAP-W1800AXU 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-W1800AXU 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-W1800AXU offers more powerful and flexible capability for wireless clients.
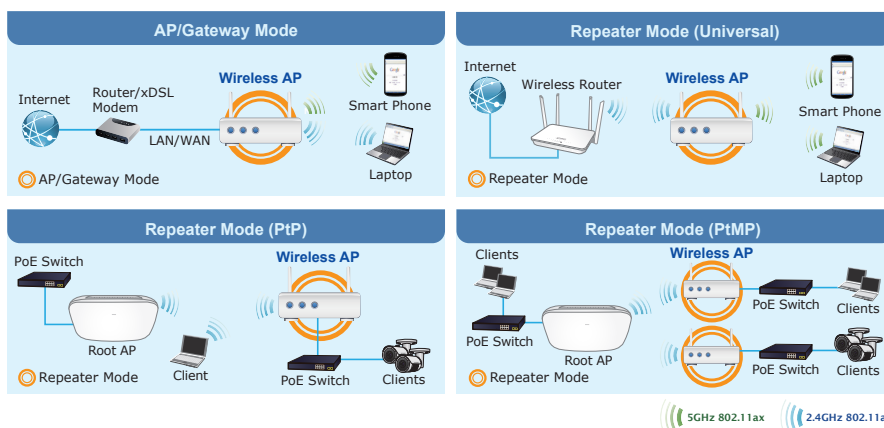
Optimized Efficiency in AP Management

The brand-new GUI configuration wizard helps the system administrator easily set up the WDAP-W1800AXU 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-W1800AXU 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.

Setup Wizard for Multiple Modes   Captive Portal Function   Home Dashboard for Wi-Fi Status
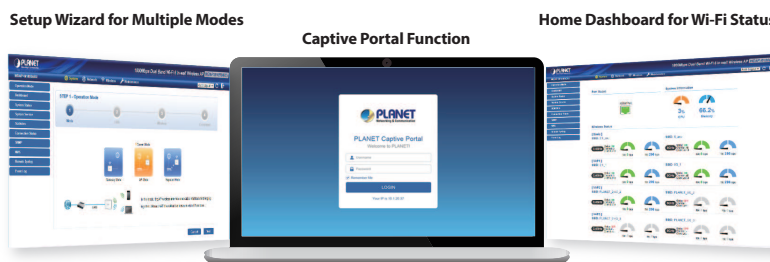
Cybersecurity Network Solution to Minimize Security Risks

The WDAP-W1800AXU supports TLSv1.3 protocols to provide strong protection against advanced threats. It includes a cybersecurity feature such as **SNMPv3** authentication, and so on to complement it as a security solution.

Applications

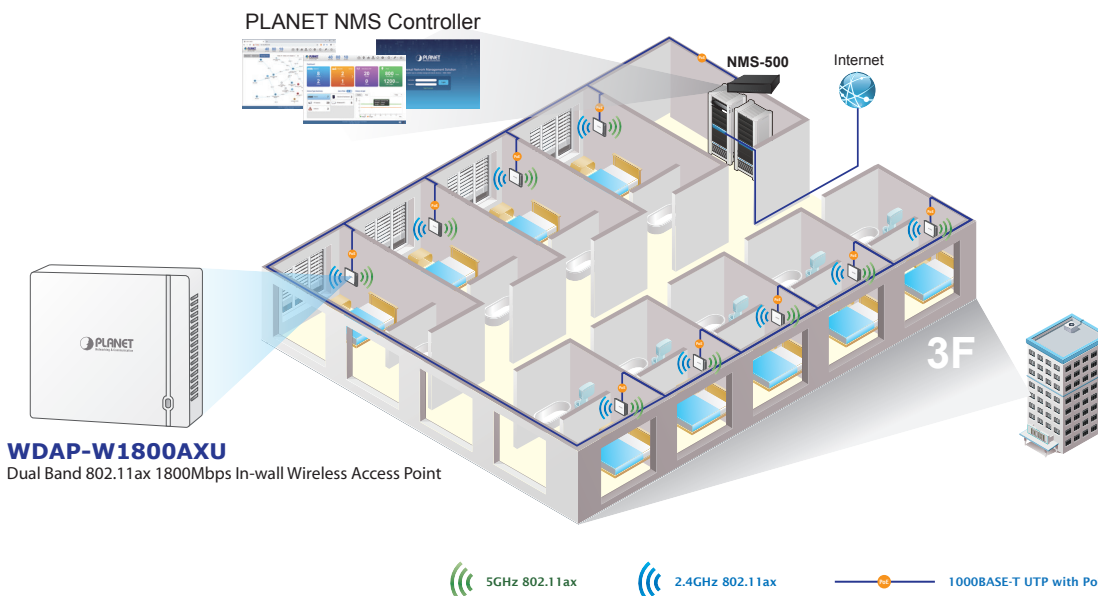## Extreme High Speed and Wi-Fi 6 Technology Make Wireless Transmission More Powerful

The WDAP-W1800AXU 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 150. Moreover, the Gigabit Ethernet port of the WDAP-W1800AXU offers ultra-fast wired connections that utilize the maximum wireless bandwidth; therefore, users will experience a fast wireless speed of over 650Mbps. With the outstanding stability of high-speed wireless transmission, the WDAP-W1800AXU can provide users with excellent experience in multimedia streaming with your mobile devices anywhere, anytime.
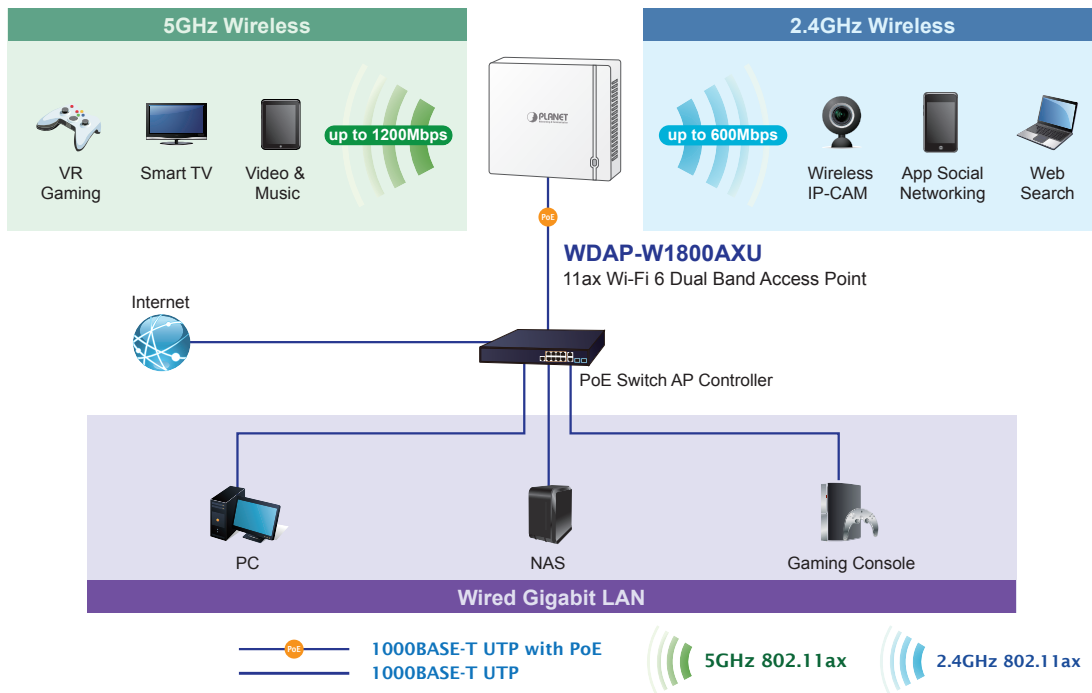
Seamless Roaming and Better Coverage

Moving between a traditional Wi-Fi AP or router and range extender, your Wi-Fi signal can experience lag or a dropped connection. With Seamless Roaming and intuitive technology, moving from room to room is never a problem now that your devices are switched to the strongest Wi-Fi signal automatically. The WDAP-W1800AXU features advanced 2T2R MU-MIMO technology which reduces the effect of dead spot, so that it can get better coverage of the existing wireless network. Furthermore, the repeater mode supported by the WDAP-W1800AXU helps to minimize the effort of installation, thus reducing cabling cost.

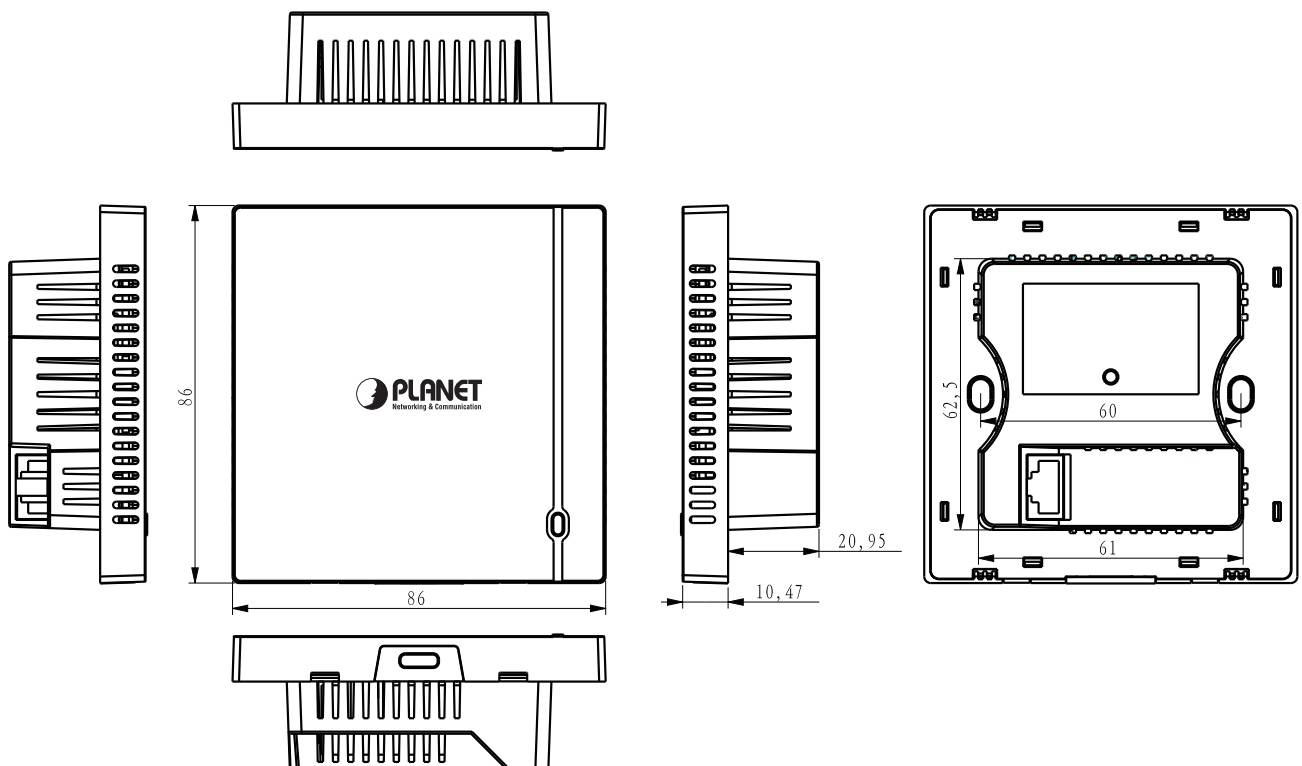## Hotel Wi-Fi Solution for Networking

Specifications

Product	WDAP-W1800AXU
Hardware Specifications	
Interfaces	PoE WAN/LAN: 1 x 10/100/1000BASE-T, auto-MDI/MDIX, 802.3at PoE In USB Type-C Port supplies 5V 0.5A for battery charging
Antennas	Gain: 4 x Internal 2dBi antenna (2.4GHz x2, 5GHz x2)
Reset Button	Reset button on the LED button Press over 5 seconds to reset the device to factory default
Dimensions (W x D x H)	86 x 86 x 35 mm
Weight	140 ± 5g
Power Requirements	48~54V 0.5A, IEEE 802.3at PoE+
Power Consumption	< 14W
Installation	In-wall mount
LED Indicators	Power, SYS
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
Band Mode	2.4GHz / 5GHz concurrent mode
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)
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	**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) **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) **5GHz channel list may vary in different countries according to their regulations.**
Channel Width	**20MHz, 40MHz, 80MHz**
Max. Transmit Power (dBm)	FCC: up to 20 ± 1dBm ETSI: < 19dBm (EIRP)

Receive Sensitivity	Network Mode	Data Rate	Receive Sensitivity (dBm)
	2.4GHz		
	802.11b	1Mbps	-92
		11Mbps	-85
	802.11g	6Mbps	-90
		54Mbps	-72
	802.11n HT20	MCS0	-88
		MCS7	-70
	802.11n HT40	MCS0	-86
		MCS7	-68
	802.11ax HT20	MCS0	-85
		MCS11	-60
	802.11ax HT40	MCS0	-85
		MCS11	-56

	Network Mode	Data Rate	Receive Sensitivity (dBm)
	5GHz		
Receive Sensitivity	**802.11a**	6Mbps	-92
		54Mbps	-72
	802.11n HT20	MCS0	-90
		MCS7	-70
	802.11n HT40	MCS0	-88
		MCS7	-68
	802.11ac HT20	MCS0	-90
		MCS7	-70
	802.11ac HT40	MCS0	-88
		MCS7	-68
	802.11ac HT80	MCS0	-85
		MCS9	-58
	802.11ax HT20	MCS0	-88
		MCS11	-62
	802.11ax HT40	MCS0	-86
		MCS11	-58
	802.11ax HT80	MCS0	-84
		MCS11	-55
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		

Management Functions	
Basic Management Interfaces	Web browser SNMP v1, v2c PLANET Smart Discovery utility PLANET NMS controller supported
Secure Management Interfaces	TLS 1.1, TLS 1.2, TLS 1.3 SNMP v3
Operation Modes	Access Point (default) Gateway Repeater
LAN	Static IP / *Dynamic IP
WAN	Static IP Dynamic IP PPPoE/PPTP/L2TP
VLAN	*IEEE 802.1Q VLAN (VID: 1~4094) *SSID-to-VLAN mapping to up to 4 SSIDs
Wireless Security	Enable/Disable SSID Broadcast Wireless Max. 32 MAC address filtering User Isolation
Max. SSIDs	8 (4 per radio)
Max. Clients	150 (100 is suggested, depending on usage)

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

Wireless Roaming	IEEE 802.11k, 802.11v, and 802.11r
Wireless QoS	Supports Wi-Fi Multimedia (WMM)

System Management	Setup wizard 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 (Gateway mode) Diagnostics
Status Monitoring	Dashboard System status/service Statistics Connection status
Event Management	Remote System Log Local Event Log
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-500, NMS-1000V
	  - Wireless Switch: WS-1032P, WS-2864PVR
	  - VPN Gateway: VR-300 series, IVR-300 series
	  - PLANET CloudViewer App

Environment & Certification	
Temperature	Operating: -20~ 55 degrees C Storage: -40 ~ 70 degrees C
Humidity	Operating: 10 ~ 90% (non-condensing) Storage: 5 ~ 90% (non-condensing)
Regulatory	CE, RoHS
Remarks [*]: The feature will be supported through firmware/system upgrade.	

Dimensions

Ordering Information

WDAP-W1800AXU	Dual Band 802.11ax 1800Mbps In-wall Wireless Access Point

Related Wireless Products

WDAP-W1200E	Dual Band 802.11ac 1200Mbps Wave 2 In-wall Wireless Access Point
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-C1800AX	1800Mbps 802.11ax Dual Band Ceiling-mount Wireless Access Point w/802.3at PoE+ and 2 10/100/1000T LAN Ports

Related PoE & APC Products

WS-1032P	Wireless AP Managed Switch with 8-Port 802.3at PoE + 2-Port 10G SFP+
WS-2864PVR	Wireless AP Managed Switch with 24-Port 802.3at PoE + 4-Port 10G SFP+ + LCD Touch Screen and 48VDC Redundant Power
NMS-500	Enterprise-class Universal Network Management Controller - 500 nodes, 5 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
NMS-1000V-12	Universal Network Management Controller with 12" LCD Touch Screen - 1024 nodes, 2 10/100/1000T LAN Ports
PLANET CloudViewer	PLANET CloudViewer App

Related VR APC System Products

VR-300	Enterprise 5-Port 10/100/1000T VPN Security Router
VR-300P	Enterprise 4-Port 10/100/1000T 802.3at PoE + 1-Port 10/100/1000T VPN Security Router
VR-300F	Enterprise 4-Port 10/100/1000T + 1-Port 1000X SFP VPN Security Router
VR-300FP	Enterprise 4-Port 10/100/1000T 802.3at PoE + 1-Port 1000X SFP VPN Security Router
VR-300W5	Wi-Fi 5 AC1200 Dual Band VPN Security Router
VR-300PW5	Wi-Fi 5 AC1200 Dual Band VPN Security Router with 4-Port 802.3at PoE+
VR-300W6	Wi-Fi 6 AX1800 Dual Band VPN Security Router
VR-300PW6	Wi-Fi 6 AX1800 Dual Band VPN Security Router with 4-Port 802.3at PoE+
VR-300W6A	Wi-Fi 6 AX2400 2.4GHz/5GHz VPN Security Router
VR-300PW6A	Wi-Fi 6 AX2400 2.4GHz/5GHz VPN Security Router with 4-Port 802.3at PoE+
IVR-300	Industrial 5-Port 10/100/1000T VPN Security Gateway with Redundant Power

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