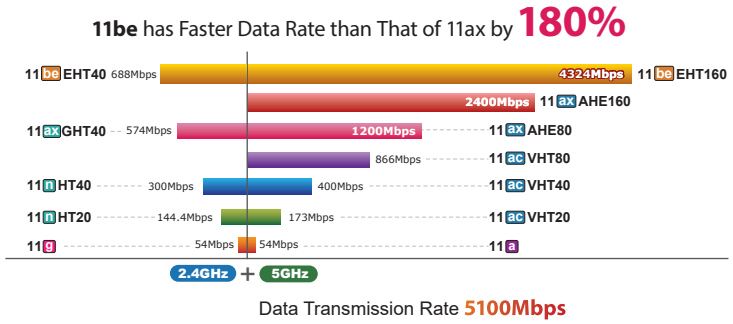
Dual Band 802.11be 5100Mbps Ceiling-mount Wireless Access Point w/802.3at PoE+, 1 10/100/1000/2500T Port and 1 10/100/1000T LAN Port

Business-grade Wi-Fi 7 Ceiling-mount Wireless AP for Future-ready Networks

High-speed, stable, and secure, PLANET WDAP-C5100BE is the ideal solution for upgrading business networks to meet the demands of high-density environments and future applications. Leveraging the latest Wi-Fi 7 (802.11be) technology and supporting both the 2.4 GHz and 5 GHz frequency bands, this ceiling-mount access point delivers exceptional wireless connectivity for airports, large offices, conference centers, and smart cities. With advanced innovations, robust stability, and high efficiency for business-grade applications, the WDAP-C5100BE is designed to optimize network performance and commercial reliability.

Ultra-Wide Channels for Stable and Efficient Enterprise Wi-Fi 7 Connectivity

The WDAP-C5100BE supports up to 160 MHz channel bandwidth, a key feature of Wi-Fi 7 that doubles the available channel width compared to Wi-Fi 6E. Its peak transmission rate of 5100 Mbps is designed for commercial environments, delivering stable performance, higher efficiency, and reliable operation.



Industrial Compliant Wireless LAN and LAN

- Compliant with the IEEE 802.11a/b/g/n/ac/ax/be (Wi-Fi 7) wireless technology
- Equipped with one 10/100/1000/2500Mbps WAN/PoE RJ45 port and one 10/100/1000Mbps LAN RJ45 port, supporting auto-negotiation and auto MDI/MDI-X for seamless connectivity

RF Interface Characteristics

- A state-of-the-art Wi-Fi 7 architecture with advanced MIMO technology
- Up to 5100 Mbps (approximately 689 Mbps at 2.4 GHz and 4324 Mbps at 5 GHz) with 4K-QAM (4096-QAM) encoding for boosted throughput

Multiple Operation Modes and Wireless Features

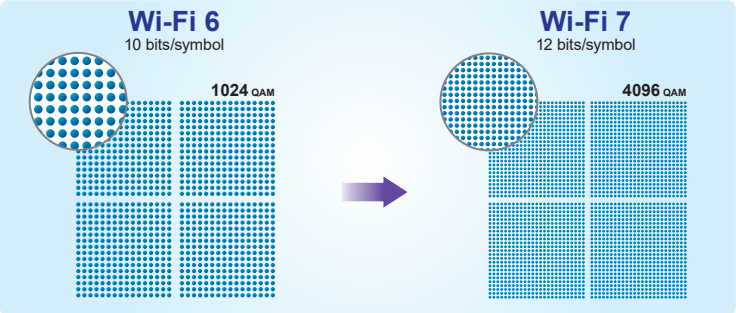
- Flexible operation modes (AP, Gateway, and Repeater) for diverse deployment needs
- Wi-Fi Multimedia (WMM) for superior streaming quality
- A real-time channel analyzer for channel utilization, and seamless roaming with 802.11k/v/r for uninterrupted connectivity
- Dynamic coverage thresholds for further weak signal interference reduction to maintain stable sessions

Secure Network Connection

- Comprehensive wireless security with WPA3-PSK, WPA2-PSK, WPA/WPA2 Enterprise, and 802.1X RADIUS authentication
- VLAN support with SSID to VLAN mapping, along with IP/Port/MAC filtering, DoS protection, and SPI firewall features for robust network safeguarding
- Customizable configurations such as DMZ, port forwarding, and per IP bandwidth control for consistent performance in high density deployments

Boost Network Throughput with 4096 QAM

With 4096 QAM encoding, the WDAP C5100BE transmits more data per signal, increasing throughput and making it ideal for high bandwidth applications such as 4K/8K video streaming, AR/VR experiences, and real time cloud services while maintaining a stable and efficient network connection.

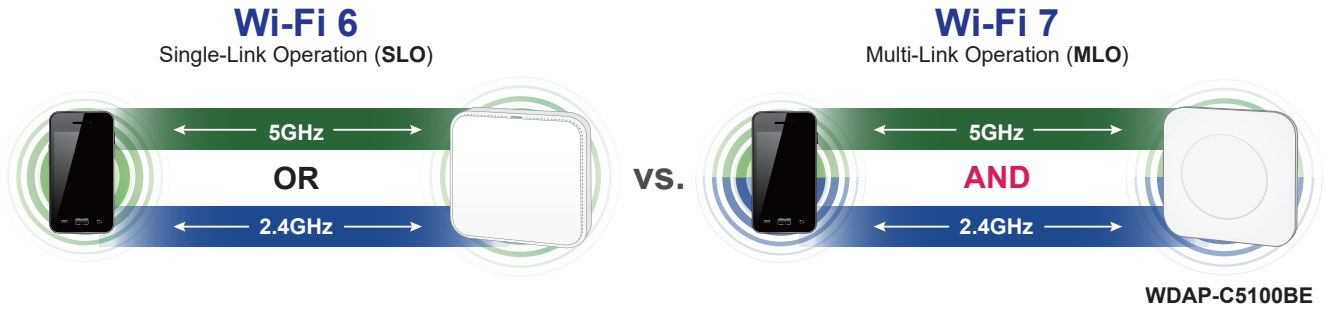


Easy Deployment and Management

- PLANET AP Controllers in AP mode.
- Self-healing mechanism through system auto reboot setting
- System status monitoring via remote syslog servers, combined with support for PLANET DDNS/Easy DDNS, Captive Portal, and RADIUS Server/Client in Gateway mode, to streamline management.
- PLANET Smart Discovery Utility, PLANET NMS system, and CloudViewerPro app for centralized, efficient deployment management.

Seamless Connectivity and Peak Network Performance

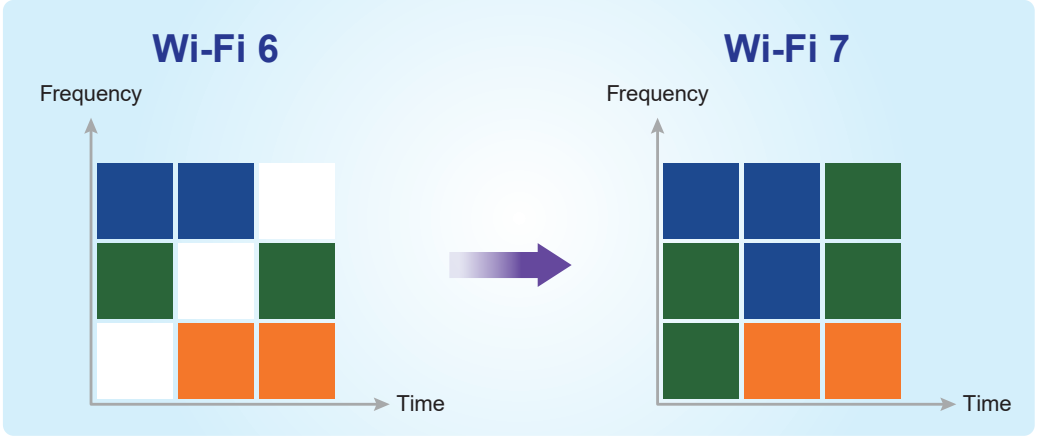
Designed for robust dual-band operation, the WDAP-C5100BE ensures seamless connectivity across both 2.4 GHz and 5 GHz frequencies. This design guarantees consistent data transfer and stable connections even in interference-prone, high-density scenarios, delivering the reliability demanded by modern commercial applications.



Optimize Spectrum Utilization

Employing advanced techniques such as dynamic allocation of resource units and spectrum puncturing, the WDAP-C5100BE minimizes spectrum waste and maximizes efficiency in densely-populated wireless environments, further enhancing overall network performance and business productivity.

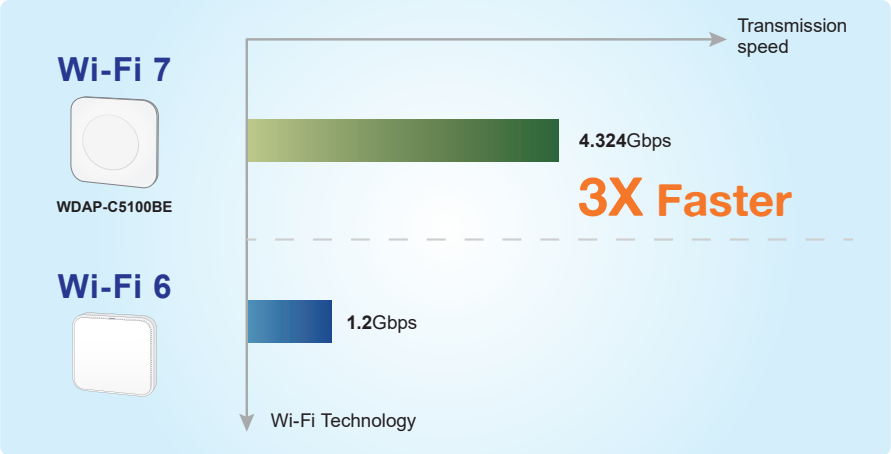
Dynamic allocation of resource units and spectrum puncturing



Some unused frequency bands are split and reallocated for reuse

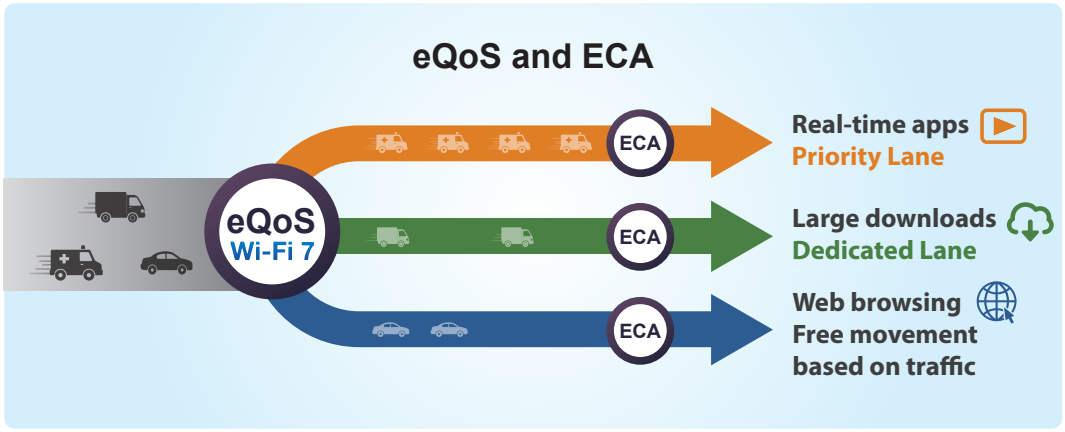
Business-oriented Performance

The WDAP-C5100BE is optimized for enterprise environments, focusing on network stability, efficiency, and high performance. It delivers speeds of up to 4.324 Gbps on the 5 GHz band, offering a threefold performance boost compared to Wi-Fi 6E while ensuring stable and continuous connectivity.



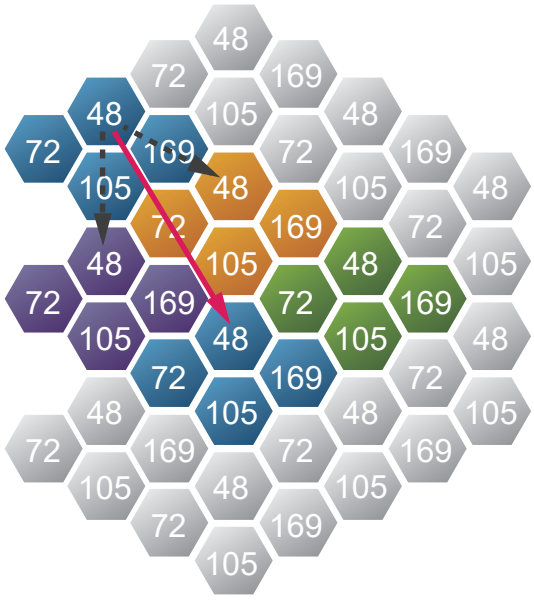
Ultra-low Latency and Jitter

Equipped with advanced Quality of Service (eQoS) and enhanced channel access technologies, the WDAP-C5100BE dynamically prioritizes data packets to minimize latency and ensure consistent performance for real-time applications such as AR/VR, video conferencing, and online gaming.



Precision Interference Control for Seamless Performance

Incorporating BSS Coloring technology to effectively differentiate overlapping networks, the WDAP-C5100BE minimizes interference and maintains stable connections. In addition, beamforming technology directs Wi-Fi signals toward connected devices, enhancing coverage and signal stability throughout the deployment area.

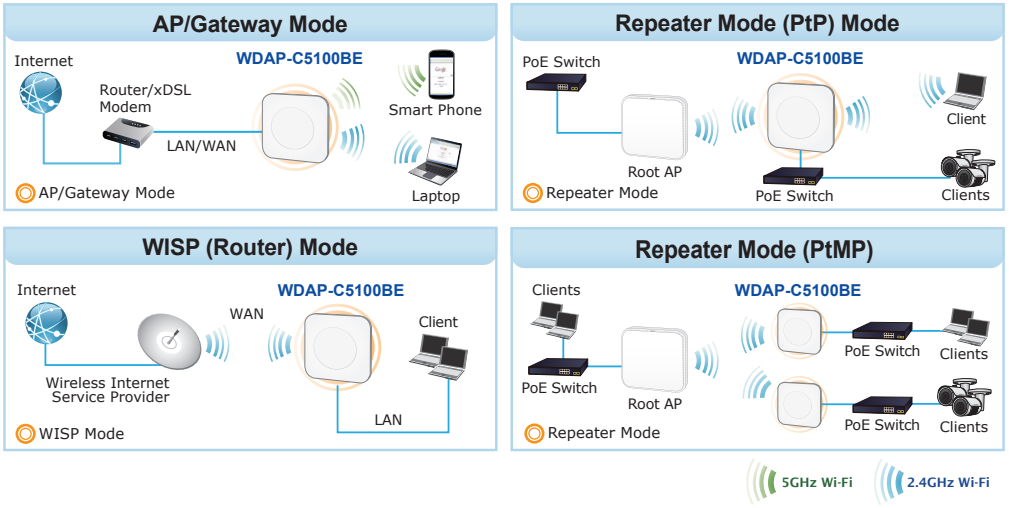


Advanced Security

The WDAP-C5100BE supports advanced encryption protocols including WPA3-PSK, WPA2-PSK, and WPA/WPA2 Enterprise to ensure robust data protection, prevent unauthorized access, and safeguard the network. Administrators can further manage access through predefined ACLs for enhanced security, making it an ideal choice for sensitive business applications.

Flexible Deployment Modes and Easy Management

With versatile operation modes (AP, Gateway, and Repeater ,and WISP), the WDAP-C5100BE adapts seamlessly to various deployment scenarios, whether establishing a new network or upgrading an existing one. Its PoE+ support (802.3at) and intuitive remote management via PLANET CloudViewerPro app and NMS systems enable effortless installation, monitoring, and maintenance.



Home Dashboard for Wi-Fi Status

CloudViewer Pro

Setup Wizard for Multiple Modes

Choose WDAP-C5100BE and Embrace the Future of Business Networking

More than just an access point, the WDAP-C5100BE is a smart, future-proof solution engineered to meet the high-performance demands of modern businesses. Its benefits of Wi-Fi 7 technology facilitate the optimization of stability, efficiency, and commercial excellence across all your network applications.

Applications

Infinite Possibilities and Seamless Connectivity for a Comprehensive Smart Environment

The WDAP-C5100BE is not only the ideal choice for upgrading enterprise networks but also a key driving force behind the smart environment revolution. Whether it's in the bustling airport hubs, modern large-scale offices, dynamic conference centers, or every corner of smart cities, the WDAP-C5100BE delivers stable, efficient, and low-latency wireless connectivity, ensuring every user enjoys an exceptional networking experience.

Moreover, it is equally suited for diverse commercial settings such as hotels, restaurants, and educational institutions, enabling customers, travelers, and students alike to experience ultimate network speed and connection stability wherever they are. The WDAP-C5100BE is ideal for future smart living and high-efficiency work environments.

Specifications

Product	WDAP-C5100BE
Hardware Specifications	
Interfaces	WAN/PoE: 1 x 10/100/1000/2500BASE-T RJ45 port LAN: 1 x 10/100/1000BASE-T RJ45 port Auto-negotiation and auto MDI/MDI-X
Antennas	Gain: 5 x internal 3dBi antenna (2.4G x 2, 5G x 3)
Reset Button	Reset button on the rear side (Press over 5 seconds to reset the device to factory default.)
LED Indicators	Composite LED (Red: Booting, Green: 2.4GHz+5GHz or 5GHz only, Blue: 2.4GHz only)
Dimensions	220 x 225 x 42.5 mm (W x D x H)
Weight	628 ± 5g
Power Requirements	48V DC IN, 0.5A, IEEE 802.3at PoE+ (WAN/PoE was 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	5GHz: IEEE 802.11be IEEE 802.11ax IEEE 802.11ac IEEE 802.11n IEEE 802.11a 2.4GHz: IEEE 802.11be IEEE 802.11ax IEEE 802.11n IEEE 802.11b IEEE 802.11g IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3ab 1000BASE-T IEEE 802.3bz 2500BASE-T IEEE 802.3x flow control IEEE 802.11k, 802.11v, and 802.11r* IEEE 802.11i
Media Access Control	CSMA/CA

Data Modulation	802.11be: MIMO-OFDM/OFDMA (BPSK / QPSK / 16QAM / 64QAM / 256QAM / 1024QAM / 4096QAM) 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 (24 channels)
	5GHz channel list may vary in different countries according to their regulations.

Max. Transmit Power (dBm)

FCC: up to 23 ± 2dBm
ETSI: < 19dBm (EIRP)

Network Mode	Data Rate	Max. Transmit Power (dBm)
2.4G Power		
802.11b	11M	23 ± 2
	1M	23 ± 2
802.11g	54M	20 ± 2
	6M	22 ± 2
802.11n HT20	MCS7	18.5 ± 2
	MCS0	21 ± 2
802.11n HT40	MCS7	18.5 ± 2
	MCS0	21 ± 2
802.11ax HE-SU20	MCS11	17 ± 2
	MCS0	20.5 ± 2
802.11ax HE-SU40	MCS11	17 ± 2
	MCS0	20.5 ± 2
802.11be EHT20	MCS13	16 ± 2
	MCS0	20.5 ± 2
802.11be EHT40	MCS13	16 ± 2
	MCS0	20.5 ± 2
5G Power		
802.11a	54M	20 ± 2
	6M	22 ± 2
802.11n HT20	MCS7	18.5 ± 2
	MCS0	21 ± 2
802.11n HT40	MCS7	18.5 ± 2
	MCS0	21 ± 2
802.11ac VHT20	MCS8	18 ± 2
	MCS0	20.5 ± 2
802.11ac VHT40	MCS9	18 ± 2
	MCS0	20.5 ± 2
802.11ac VHT80	MCS9	17.5 ± 2
	MCS0	20 ± 2
802.11ax VHT160	MCS9	16 ± 2
	MCS0	18.5 ± 2
802.11ax HE-SU20	MCS11	17± 2
	MCS0	20.5 ± 2
802.11ax HE-SU40	MCS11	17 ± 2
	MCS0	20.5 ± 2
802.11ax HE-SU80	MCS11	16.5 ± 2
	MCS0	20 ± 2
802.11ax HE-SU160	MCS11	15.5 ± 2
	MCS0	18.5 ± 2

Max. Transmit Power (dBm)	**802.11be EHT20**	MCS13	15.5 ± 2
		MCS0	20.5 ± 2
	802.11be EHT40	MCS13	15.5 ± 2
		MCS0	20.5 ± 2
	802.11be EHT80	MCS13	15 ± 2
		MCS0	20.5 ± 2
	802.11be HT160	MCS13	13 ± 2
		MCS0	18.5± 2
Receive Sensitivity	**Network Mode**	**Data Rate**	**Receive Sensitivity (dBm)**
	2.4GHz		
	802.11b	11Mbps	-89
		1Mbps	-97
	802.11g	54Mbps	-76
		6Mbps	-94
	802.11n HT20	MCS7	-75
		MCS0	-94
	802.11n HT40	MCS7	-72
		MCS0	-91
	802.11ax HE-SU20	MCS11	-65
		MCS0	-94
	802.11ax HE-SU40	MCS11	-61
		MCS0	-92
	802.11be EHT20	MCS13	-58
		MCS0	-94
	802.11be EHT40	MCS13	-56
		MCS0	-91
	5GHz		
	802.11a	54Mbps	-76
		6Mbps	-94
	802.11n HT20	MCS7	-69
		MCS0	-93
	802.11n HT40	MCS7	-67
		MCS0	-90
	802.11ac VHT20	MCS8	-69
		MCS0	-93
	802.11ac VHT40	MCS9	-66
		MCS0	-90
	802.11ac VHT80	MCS9	-61
		MCS0	-87
	802.11ac VHT160	MCS9	-58
		MCS0	-84
	802.11ax HE-SU20	MCS11	-64
		MCS0	-93
	802.11ax HE-SU40	MCS11	-61
		MCS0	-91
	802.11ax HE-SU80	MCS11	-58
		MCS0	-88
	802.11ax HE-SU160	MCS11	-55
		MCS0	-85
	802.11be EHT20	MCS13	-57
		MCS0	-93
	802.11be EHT40	MCS13	-54.5
		MCS0	-91
	802.11be EHT80	MCS13	-51.5
		MCS0	-88
	802.11be EHT160	MCS13	-48.5
		MCS0	-85

Software Features	
LAN	Static IP / Dynamic IP
WAN	Static IP Dynamic IP PPPoE/PPTP/L2TP
Wireless Mode	Access Point Gateway Repeater WISP
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 (128 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 CloudViewerPro
Environment & Certification	
Temperature	Operating: -10~ 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-C5100BE	Dual Band 802.11be 5100Mbps Ceiling-mount Wireless Access Point w/802.3at PoE+ 1 10/100/1000/2500T Port and 1 10/100/1000T LAN Port

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-W3000AX	Dual Band 802.11ax 3000Mbps 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

* To have the best performance and wireless connection, matching it with the above-related products is recommended.

Related PoE & APC Products

MGS-6311-8P2X	L3 8-Port 2.5GBASE-T 802.3at PoE + 2-Port 10GBASE-X SFP+ Managed Ethernet Switch
MGS-910XP	8-Port 10/100/1000/2500T 802.3at PoE+ + 1-Port 10G SFP+ Multigigabit Ethernet Switch (120 Watts)
IGS-6325-4UP2X	Industrial L3 4-Port 2.5GBASE-T 802.3bt PoE + 2-Port 10G SFP+ Managed Ethernet Switch
IGS-1000-4UP2X	Industrial 4-Port 10/100/1000/2500T 802.3bt PoE + 2-Port 10G SFP+ Ethernet Switch
WGS-6325-8UP2X	Industrial L3 4-Port 2.5G 802.3bt PoE + 4-Port 10/100/1000T 802.3bt PoE + 2-Port 10G SFP+ Wall-mount Managed Switch
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 (AP controller)
VR-300FP	Enterprise 4-Port 10/100/1000T 802.3at PoE + 1-Port 1000X SFP VPN Security Router (AP controller)
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
UNC-NMS	Universal Network Management Central Controller with LCD & 6 10/100/1000T LAN Ports (1024 x 100 nodes)
PLANET CloudViewerPro	PLANET CloudViewerPro App
PLANET NMSViewerPro	PLANET NMSViewerPro App

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