MAIPU

IAP300-821-PE

AX1800 Ceiling Mounted AP

Highlight Features

- Support 802.11ax MU-MIMO Technology
- Support 802.11K/V Roaming Technology
- Central Managed by IGW500 Internet Gateway
- Self-Provisioning Networking Supported
- Lifetime Free Maipu MMC Cloud Management

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Key Features

- **High-speed Gigabit dual-band wireless**

The IAP300-821-PE supports 2.4GHz and 5GHz dual-band concurrent communication. The 2.4GHz and 5GHz bands adopt a new generation of Wi-Fi wireless standard 802.11ax, providing 2.4GHz 574mbps and 5GHz 1201mbps. The highest access rate of the whole device is 1775Mbps. Compared with the traditional 802.11ac wireless AP, the throughput is significantly improved, bringing a real gigabit high-speed extreme experience.

- **Intelligent AP management technology, AP zero configuration, plug and play**

In the FIT AP application mode, the zero-configuration FIT AP can be found and automatically connected to the IGW500 series converged internet gateway through the L2/L3 network. The converged gateway can configure, operate and manage the FIT AP. IGW500 converged gateway supports rich L2/L3 functions, and forms the management and monitoring of FIT AP through the networks.

- **Support 802.11k/v protocols for fast WiFi roaming**

The IAP300-821-PE supports intelligent fast roaming technology, significantly improving user experience when mobile clients move between APs. By optimizing the switching process between APs and utilizing techniques like PMK Caching, it ensures seamless mobility and smooth roaming. This enhancement is crucial for maintaining service continuity and reliability, especially for latency-sensitive applications running over the WLAN.

Compared to basic roaming solutions, this fast roaming technology provides quicker AP switching, reduced packet loss, and a smoother experience for roaming clients. This is essential for mobility-enabled WLAN applications.

- **Support MU-MIMO, higher capacity**

The IAP300-821-PE supports MU-MIMO (multi-user multi-input multi-output), realize concurrent transmission of multiple Wi-Fi users, double the wireless effective capacity, and easily deal with high-density scenes. The wired adopts two gigabit ethernet interfaces for uplink, without the bottleneck of wireless bandwidth.

5GHz has more abundant bandwidth resources and less wireless interference. 802.11ax protocol adopts the latest modulation technology to greatly improve the wireless rate. Compared with traditional device, it has higher speed and larger capacity. At the same time, it realizes the effects of intelligent load and 5GHz prior, improves the utilization of 5GHz band, and improves the total capacity.

- **Unique antenna signal optimization algorithm, improving AP signal coverage**

The unique antenna signal optimization algorithm is adopted to make IAP300-821-PE signal have wide coverage and strong penetration ability. A single AP can cover 25-50 meters based on different environment scenarios which can reduce customers' investment in hardware equipment.

- **SSID + VLAN binding, ensuring information security**

The IAP300-821-PE supports transmitting 16 SSIDs at the same time. By setting different passwords for each SSID, dividing individual VLAN ID and assigning different network segments, it is easy to realize the effect that different wirelesses (SSID) transmit different services. By this way, sensitive information can be safely isolated internally.

- **One-key network optimization, improving the maintenance efficiency**

The IAP300-821-PE support one-key network auto channel optimization function. This will greatly improve the maintenance efficiency and reduce the troubleshooting cost.

- **Green design and energy saving**

The IAP300-821-PE adopts professional green environmental protection and low power consumption design. The device has low calorific value and supports green AP mode. It also supports U-APSD that allows devices to enter a low-power sleep mode when not actively transmitting data while ensuring they remain reachable.

Technical Specifications

Product Model	IAP300-821-PE
Version	**V5**
Interface Specification	
Service Port	1*10/100/1000Mbps Base-T adaptive Ethernet Port, 802.3af PoE (LAN1) 1*10/100/1000Mbps Base-T adaptive Ethernet Port (LAN2)
Power Interface	1*12VDC (Nominal, +/- 5%)
Indicators	1* Green LED (For System and Radio status)
Reset Button	1* Rest Button (Factory reset)
Environment Specification	
Working Temperature	0°C to +45°C
Working Humidity	10% to 90% non-condensing
Storage Temperature	-40°C to +70°C
Storage Humidity	5% to 95% non-condensing
IP Rating	IP41
Weight	0.4 kg
Dimension (W*D*H) mm	180mm*180mm*31mm
Hardware Specification	
Installation Mode	Ceiling Mounting
Power Supply	Adapter: DC 12 V/1.5 A (optional) PoE: IEEE 802.3af/802.3at-compliant (compatible).
Power Consumption	<13W (without USB output)
Wireless Specification	
RF Design	Dual-radio design, one 2.4 GHz radio and one 5 GHz radio - Radio1: 2.4 GHz, 2 streams: 2*2 - Radio2: 5 GHz, 2 streams: 2*2
Operating Bands	- Radio1: 2.400 to 2.4835GHz - Radio2: 5.150–5.350GHz, 5.47–5.725GHz, 5.725–5.850GHz
Transmission Rate	- 802.11b: 1Mbps, 2Mbps, 5.5Mbps, 11Mbps - 802.11a/g: 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps - 802.11n: 6.5Mbps-300Mbps (MCS0-MCS31, HT20-HT40), 400Mbps with 256-QAM - 802.11ac: 6.5Mbps-866Mbps (MCS0-MCS9, NSS=1-2, VHT20-VHT80) - 802.11ax (2.4GHz): 8.6Mbps-574Mbps (MCS0-MCS11, NSS=1-2, HE20-HE40) - 802.11ax (5GHz): 8.6Mbps-1,202Mbps (MCS0-MCS11, NSS = 1-2, HE20-HE80)
Antenna	Internal 4 Antennas
Antenna Gain	2.4 GHz: 4.0dBi 5 GHz: 4.0dBi
Transmit Power	2.4 GHz: +20dBm 5 GHz: +20dBm The actual transmit power complies with the regulatory requirements for radio frequency emissions in various countries and regions
Transmit Power Adjustment	1 dBm
Modulation Mode	- 802.11b: BPSK, QPSK, CCK

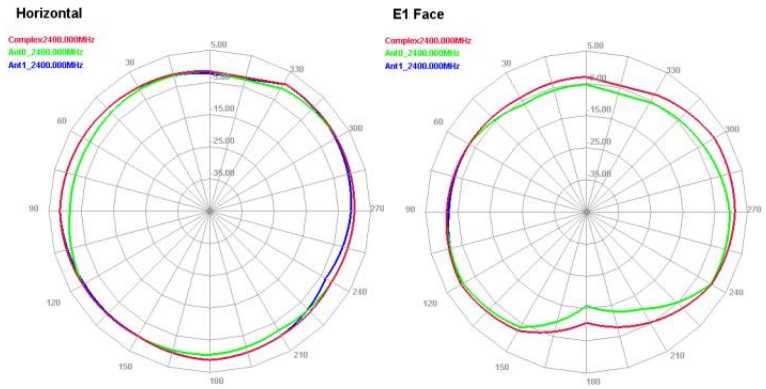
	- 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM - 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM
Modulation and Encoding	- Low Density Parity Check (LDPC) - Maximum Likelihood Detection (MLD) - Beamforming
Advanced RF Features	- Channel Rate Adjustment, include TPC (Transmit Power Control) - ACS (Automatic Channel Scanning)
Fast Roaming	- 802.11 K/V, PMK Caching
Rate Limitation	- Based On SSIDs - Based On Users
Load Balancing	- Based On Users
Software Specification	
WIFI Standards	IEEE 802.11a/b/g/n/ac/ax
SSID Numbers	16*SSIDs (2.4GHZ+5GHZ)
Channelization	20, 40, 80 MHz
STA Capacity	256
Recommend Users	100-150
Working Mode	FIT/FAT Mode
Network Features	PPPoE Client, DHCP Server/Client, Static IP, DNS Proxy, Bridge, NAT (Note: FAT Working Mode)
Security Type	Open, PSK, WPA-Personal, WPA-Enterprise, WPA2-Personal, WPA2-Enterprise, WPA3-Personal, WPA3-Enterprise, Portal, 802.1X, Radius
Working Bandwidth	- 802.11ax: HE80, HE40, HE20 - 802.11ac: VHT80, VHT40, VHT20 - 802.11n: HT40, HT20
Data Rate	- Radio1: 2.4 GHz, 574 Mbps - Radio2: 5 GHz, 1201 Mbps - Combined: 1.775 Gbps
MIMO Technologies	- Multi-User Multiple Input Multiple Output (MU-MIMO) - Maximum Ratio Combining (MRC) - Space-Time Block Coding (STBC) - Cyclic Delay/Cyclic Shift Diversity (CDD/CSD) - Dynamic MIMO power saving
Energy Saving	- U-APSD - Green AP mode
Advanced WIFI Features	- Orthogonal Frequency Division Multiple Access (OFDMA) - Short GI (Short Guard Interval) - DFS (Dynamic Frequency Selection) - Spectrum Navigation

Order Information

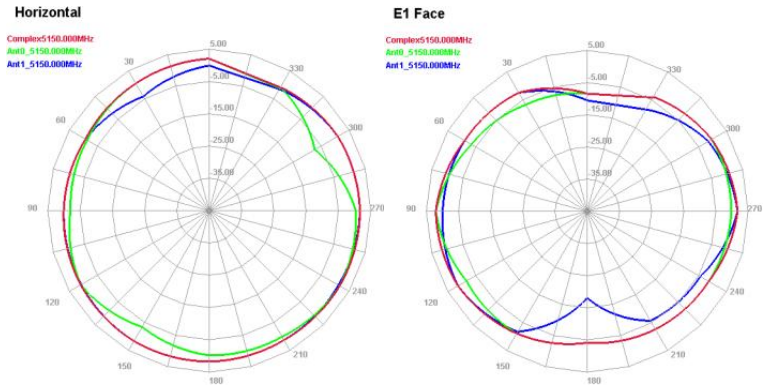
Model	Description
IAP300 Series AX1800 Access Point	
IAP300-821-PE	V5 Version: Ceiling mount AX1800 802.11a/b/g/n/ac/ax, Dual frequency band, dual mode, forwarding performance of the whole device 1775Mbps, 2*2:2 MIMO, inbuilt antennas, PoE power input, 1*1000M LAN Port (PoE), 1*1000M LAN Port. (installation accessory included)

Antenna Patterns

- **2.4GHz Wi-Fi (Antennas 1,2)**

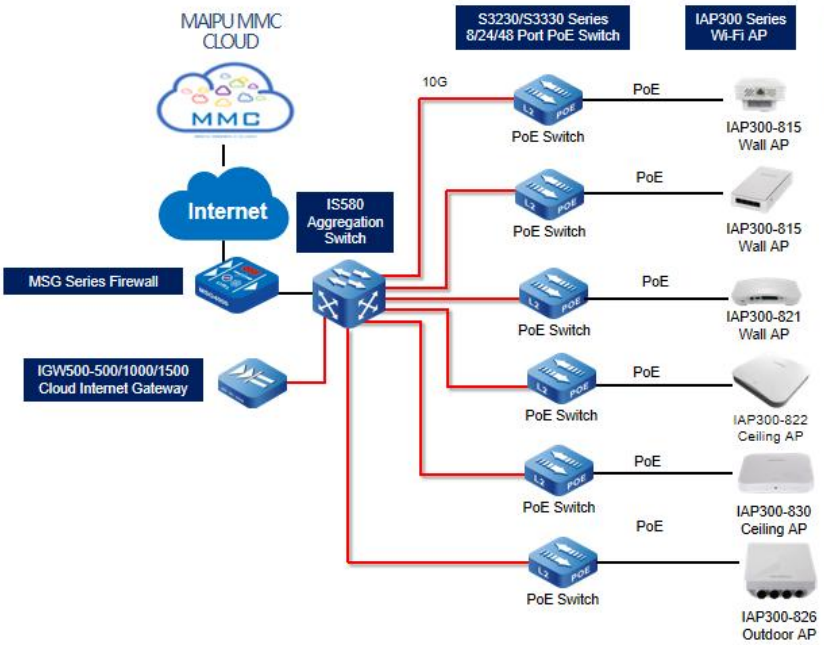


- **5GHz Wi-Fi (Antennas 1,2)**



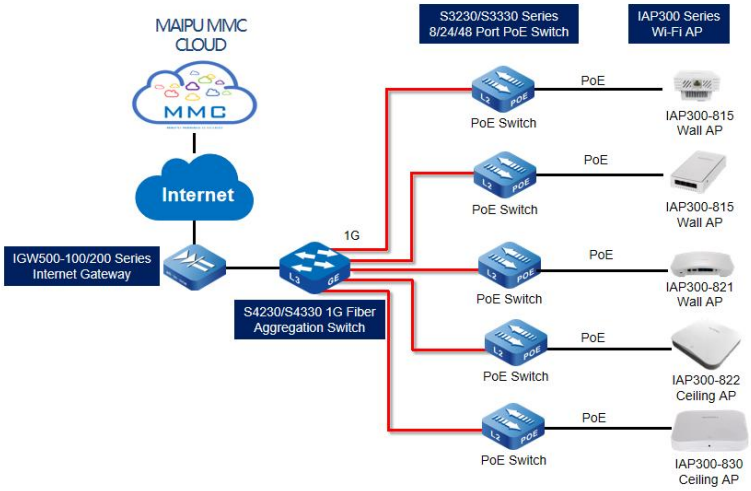
Application Scenario

Scenario One: Medium-Sized Networking



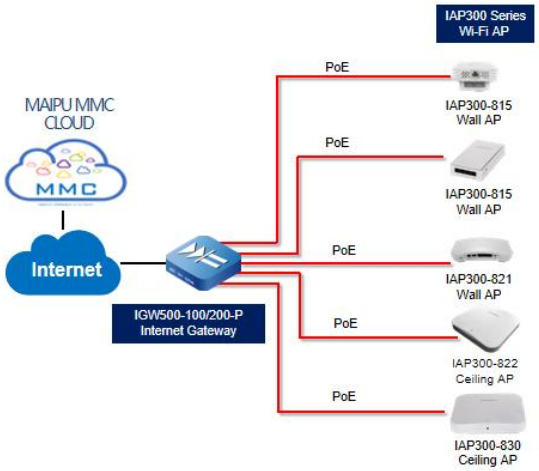
Highlight:
- 500+ User Scale Network
- 10G Bandwidth For Aggregation
- Unified Managed by Maipu MMC Cloud

Scenario Two: Branch Networking



Highlight:
- 100+ User Scale Network
- 1G Bandwidth For Aggregation
- Unified Managed by Maipu MMC Cloud

Scenario Three: Small Office Networking



Highlight:
- 50+ User Scale Network
- Inbuilt PoE Interfaces for Saving Cost
- Unified Managed by Maipu MMC Cloud

Maipu values and appreciates comments you may have concerning our products or this document. Please address comments to:

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