DATASHEET
AP-AC780

Air Pro®
Simple | Secure | Trusted

High Performance Smart Access Controller

24-Port Gigabit Ethernet with 4× 10G SFP+ Uplink Ports

PRODUCT OVERVIEW

The AirPro AP-AC780 is a high-performance smart Access Controller (AC) designed for SMB, enterprise wireless networks, and large enterprise branch deployments. When combined with AirPro Smart EAP series Access Points, it delivers a centrally managed, secure, and scalable Wireless LAN (WLAN) solution.

The AP-AC780 is equipped with 24 × 10/100/1000 Mbps Ethernet ports and 4 × 10GbE SFP+ uplink ports, providing high-speed connectivity and flexible network expansion. It is capable of managing up to 520 smart wireless access points, making it suitable for large and complex wireless environments.

The device offers robust WLAN access control with features such as precise user management, comprehensive RF management, advanced security mechanisms, powerful QoS, seamless roaming, and authentication based on existing network infrastructure.

In addition, the AP-AC780 integrates a full Layer 3 core switch with powerful forwarding performance. It can operate simultaneously as a wireless controller and an L3 core switch, serving as both the intelligence center of the wireless network and the data exchange hub of the entire network. This architecture enables true wired and wireless network convergence, simplifying deployment and management while enhancing overall network efficiency.

Appearance	Description
 AP-AC780	**Enterprise-Grade Wireless Access Controller:-** • High-performance smart Access Controller designed for SMB, enterprise WLANs, and large branch deployments. • Seamlessly works with AirPro Smart EAP Series Access Points. • Delivers a centrally managed, secure, and scalable WLAN solution. **High-Density Access & Expansion:-** • Supports up to 520 managed Access Points • Handles up to 10,000 concurrent wireless users • Ideal for large campuses, enterprises, education, healthcare, and hospitality networks **High-Speed Port Configuration:-** • 24 × 10/100/1000 Mbps Ethernet access ports • 4 × 10GbE SFP+ uplink ports for high-speed backbone connectivity • Flexible network expansion and aggregation capability **Integrated Wireless Controller + Layer 3 Core Switch:-** • Built-in full Layer 3 core switching functionality • Operates simultaneously as: - Wireless Access Controller (AC) - Layer 3 Core Switch • Acts as the intelligence center for wireless and data exchange hub for the wired network • Enables true wired and wireless network convergence

High-Density Access Ports with Intelligent Integrated Control and Forwarding Architecture

The AP-AC780 adopts advanced ASIC-based wireless forwarding technology, enabling both wireless and wired traffic to be processed and forwarded through a single unified chipset. This design ensures high performance, low latency, and stable data transmission even in high-density network environments.

Its intelligent integrated control and forwarding architecture combines the functions of a wireless controller and a routing switch into one platform. By supporting a direct connection networking mode for wireless controllers, the AP-AC780 simplifies network topology and deployment.

This integrated architecture significantly reduces overall investment costs, enhances network performance, and simplifies network management, making it an ideal solution for enterprise-grade wired and wireless converged networks.

Automatic AP Emergency Mechanism

The AP-AC780 supports an automatic emergency mechanism that enables access points (APs) to intelligently monitor network link status. When the wireless Access Controller (AC) becomes unavailable, the AP automatically and quickly switches its operating mode.

In this emergency mode, the AP continues to forward existing user traffic and allows new users to access the network without interruption. This ensures high availability and service continuity across the entire wireless network.

By minimizing downtime and maintaining user connectivity during controller failures, this mechanism helps ensure that wireless users remain continuously online, delivering a reliable and resilient wireless experience.

Intelligent Wireless Network Control with Automatic Perception

Intelligent RF Management

The AP-AC780 supports intelligent RF management with automatic power and channel adjustment. Using advanced RF detection and management algorithms, the system optimizes radio parameters to achieve improved wireless coverage and overall network performance.

When an access point (AP) experiences interference from strong external signals, the controller automatically directs the AP to switch to the most suitable operating channel. This dynamic adjustment effectively avoids interference and ensures stable, reliable, and high-quality wireless network communications.

Intelligent Terminal Control Based on Airtime Fairness

The intelligent terminal control mechanism based on airtime fairness significantly enhances performance for both individual clients and the overall wireless network.

This technology ensures that clients with higher data transmission rates achieve substantially improved throughput, while lower-rate clients experience minimal impact. As a result, network efficiency and user experience are optimized, particularly in open and high-density wireless environments.

Once high-rate clients complete their data transmissions, the number of active transmitting devices on the network is reduced. This leads to lower channel contention and fewer retransmissions, thereby significantly improving overall access point (AP) performance and wireless network stability.

Easy-to-Manage Wireless Network

AP Plug-and-Play

When deployed with the AP-AC780, AirPro Smart Access Points support true plug-and-play operation with zero configuration. All AP management, control, and configuration are centrally handled by the wireless Access Controller (AC).

Network administrators are not required to individually configure or maintain large numbers of APs. Tasks such as initial configuration, firmware upgrades, security policy updates, and ongoing management are performed centrally and uniformly through the AC.

This centralized management model significantly reduces operational complexity, lowers maintenance effort, and improves overall network efficiency, making it ideal for enterprise-scale wireless deployments.

AP-AC780
High Performance Smart Access Controller

PRODUCT SPECIFICATIONS

Hardware Specifications

Item	AP-AC780
Service port	24*10/100/1000MBase-T +4*10GbE SFP+ ports
Management port	One console port (RJ-45), one USB 2.0, one 10/100/1000M Base-T out of band management port
Power supply	AC 100 V to 240 V, 50 Hz to 60 Hz
Maximum power consumption	25W
Working/Storage temperature	0°C to +50°C –40°C to +70°C
Working/Storage RH	5% to 90% (non-condensing)
Dimensions (W x D x H) (mm)	440 x 240 x 44

Software Specifications

Item	AP-AC780
The base number of manageable APs	520
Maximum number of manageable APs	520
Maximum number of concurrent wireless users	10k
VLANs	4K
ARP table	8K
Switching time during roaming	< 30 ms
L2 protocols and standards	IEEE802.3 (10Base-T), IEEE802.3u (100Base-TX), IEEE802.3ab (1000Base-T), IEEE802.1Q (VLAN), IEEE802.1p (COS), IEEE802.1x (Port Control) IGMP Snooping, MLD Snooping GVRP, PVLAN
L3 protocols and standards	Static Routing RIPv1/v2, OSPF, VRRP, IGMP v1/v2/v3 ARP, ARP Proxy PIM-SM, PIM-DM, PIM-SSM
Wireless protocols and standards	802.11, 802.11a, 802.11b, 802.11g, 802.11n, 802.11d, 802.11h, 802.11i, 802.11e, 802.11k
CAPWAP protocol	Supports L2/L3 network topology between an AP and an AC. Enables an AP to automatically discover an accessible AC. Enables an AP to automatically upgrade its software version from an AC. Enables an AP to automatically download configurations from an AC.
RF management	Setting country codes Manually/automatically setting the transmit power Manually/automatically setting the working channel Automatically adjusting the transmission rate Blind area detection and repair RF environment scanning, which enables a working AP to scan the surrounding RF environment RF interference detection and avoidance 11n-preferred RF policy SSID hiding 20 MHz and 40 MHz channel bandwidth configuration Airtime protection in hybrid access of 11bg and 11n terminals Terminal-based airtime fairness scheduling Terminal locating (A terminal locating algorithm can be embedded in the AC) Spectral navigation (5 GHz preferred) 11n only SSID-based or Radio-based limit on the number of users User online detection Automatic aging of traffic-free users Prohibiting the access of clients with weak signals Remote probe analysis
Security	64/128 WEP, dynamic WEP, TKIP, CCMP, and SMS encryption 802.11i security authentication and two modes (Enterprise and Personal) of 802.1x and PSK WAPI encryption and authentication LDAP authentication MAC address authentication Portal authentication, including built-in portal, external portal, and custom portal authentication modes PEAP user authentication Forwarding security control, such as frame filtering, white list, static blacklist, and dynamic blacklist User isolation

PRODUCT SPECIFICATIONS

Software Specifications

	Periodic Radio/SSID enabling and disabling Access control of free resources Secure admission control of wireless terminals Access control of various data packets such as MAC, IPv4, and IPv6 packets Secure access control of APs, such as MAC authentication, password authentication, or digital certificate authentication between an AP and an AC Radius Client Backup authentication server Wireless SAVI User access control based on AP locations Wireless intrusion detection system (WIDS) and wireless intrusion prevention system (WIPS) Protection against flooding attacks Protection against spoofing attacks
Forwarding	IPv6 access and forwarding; constructing IPv6 WLAN access service on an IPv4 network; providing IPv4 WLAN access service on an IPv6 network; and constructing private IPv6 WLAN network service on an IPv6 network Fast roaming between APs served by the same AC IPv4 and IPv6 multicast forwarding WDS AP
QoS	802.11e (WMM); and 4-level priority queues, ensuring that applications sensitive to the real-time effect, such as voice and video services, are transmitted first Ethernet port 802.1P identification and marking Mapping from wireless priorities to wired priorities Mapping of different SSIDs/VLANs to different QoS policies Mapping of data streams that match with different packet fields to different QoS policies Access control of MAC, IPv4, and IPv6 data packets Load balancing based on the number of users Load balancing based on user traffic Load balancing based on frequency bands Bandwidth limit based on APs Bandwidth limit based on SSIDs Bandwidth limit based on terminals Bandwidth limit based on specific data streams Power saving mode Multicast-to-unicast mechanism Automatic emergency mechanism of APs Intelligent identification of terminals
Management	Web management Configuration through a console port SNMP v1/v2c/v3 Both local and remote maintenance Local logs, Syslog, and log file export Alarm Fault detection Statistics Login through Telnet Login through SSH Dual-image (dual-OS) backup Hardware watchdog AC cluster management; automatic information synchronization between ACs in a cluster, and automatic or manual push of configuration information SSID-based user permission management mechanism