DATASHEET
AP-SG6500E L3 10G Series

Air Pro®
Simple | Secure | Trusted

L3 10G Copper Routing Switch

OVERVIEW

The AirPro AP-SG6500E Copper Series switch is a fully stackable routing switch equipped with fixed, built-in 10GbE uplink ports. Designed for high availability, scalability, and security, it offers advanced Layer 3 features while ensuring energy efficiency and easy operation. As a fully managed switch, it is ideal for deployment in aggregation or access layers across campus, enterprise, government, and service provider networks.

Appearance	Description
 **AP-SG6500E-30X6XG-R1**	• 24x10/100/1000Base-T + 6x10G (SFP+) • 1 console, 1 USB, 1 RJ45 management port • AC power supply • Switching capacity: 168Gbps • Forwarding rate: 125Mpps
 **AP-SG6500E-30X6XG-P-R1**	• 24x10/100/1000Base-T PoE + 6x10G (SFP+) • 1 console, 1 USB, 1 RJ45 management port • PoE/PoE+ up to 370w • AC power supply • Switching capacity: 168Gbps • Forwarding rate: 125Mpps
 **AP-SG6500E-54X6XG-R1**	• 48x10/100/1000Base-T + 6x10G (SFP+) • 1 console, 1 USB, 1 RJ45 management port • AC power supply • Switching capacity: 216Gbps • Forwarding rate: 161Mpps
 **AP-SG6500E-54X6XG-P-R1**	• 48x10/100/1000Base-T PoE + 6x10G (SFP+) • 1 console, 1 USB, 1 RJ45 management port • PoE/PoE+ up to 740w • AC power supply • Switching capacity: 216Gbps • Forwarding rate: 161Mpps

KEY FEATURES AND BENEFITS

Performance and Scalability
The AP-SG6500E series offers high switching capacity, supporting wire-speed Layer 2 and Layer 3 forwarding with high routing performance for both IPv4 and IPv6 protocols. Its 10 Gigabit connectivity is facilitated through a hot-pluggable 10 Gigabit SFP+ transceiver, supporting distances of up to 300 meters over multimode fiber and 10 to 40 km over single-mode fiber, depending on the optical module used.

Virtual Switch Framework (VSF)
The Virtual Switch Framework (VSF) enables multiple AirPro switches to function as a single logical device, facilitating the sharing of information and data tables across different switches. This significantly enhances both performance and port density while simplifying network management and improving reliability.

Advanced Layer 3 Features
The AP-SG6500E series provides hardware-based IP routing with support for RIP, OSPF, ISIS, and BGP, enabling dynamic routing through information exchange with other Layer 3 switches and routers. Additionally, Policy-Based Routing (PBR) ensures efficient multi-exit applications, allowing for greater flexibility in traffic management.

Enhanced Multicast Capabilities
The series includes a robust set of multicast features, including IGMPv1/v2/v3 snooping, fast leave, and Layer 3 multicast protocols such as IGMPv1/v2/v3. Features like Multicast VLAN Register (MVR), multicast receiver/sender control, and illegal multicast source detection ensure an optimized multicast experience for users.

High-Reliability Network

AirPro's Multi-layer Ring Protection Protocol (MRPP) enhances network reliability by offering faster convergence, simplified protocol calculations, and reduced system resource consumption compared to traditional spanning tree protocols. This improves Ethernet network stability and efficiency.

Comprehensive Quality of Service (QoS)

With eight queues per port, the AP-SG6500E series supports traffic prioritization based on IEEE 802.1p, DSCP, IP precedence, and TCP/UDP port numbers. This ensures superior performance for real-time applications such as voice and video. Additionally, bi-directional rate limiting per port or traffic class optimizes bandwidth usage and provides full network resource control.

Advanced IPv6 Support

Supporting hardware-based IPv6 switching and routing, the AP-SG6500E series is designed to meet the growing demand for larger addressing spaces and heightened security. This makes it an ideal choice for modern networks requiring future-proof IPv6 capabilities.

PRODUCT SPECIFICATIONS

Hardware Specifications

Item	AP-SG6500E-30X6XG-R1	AP-SG6500E-54X6XG-R1	AP-SG6500E-30X6XG-P-R1	AP-SG6500E-54X6XG-P-R1
Physical port	24*10/100/1000Base-T + 6*10GbE(SFP+) Auto-MIDX	48*10/100/1000Base-T + 6*10GbE(SFP+) Auto-MIDX	24*10/100/1000Base-T PoE + 6*10GbE(SFP+) Auto-MIDX	48*10/100/1000Base-T PoE + 6*10GbE(SFP+) Auto-MIDX
Management port	1x RJ45 Ethernet Management port			
	1x Console port			
	1x USB2.0 interface			
Performance				
Switching Capacity	168Gbps	216Gbps	168Gbps	216Gbps
Forwarding rate	125Mpps	161Mpps	125Mpps	161Mpps
Jumbo Frame	12K	12K	12K	12K
MAC Address	32K	32K	32K	32K
ARP Table	1K	1K	1K	1K
Routing Table	1K	1K	1K	1K
ACL Table	3K	3K	3K	3K
Physical				
Dimension (W*H*D)	440mm x 44mm x 380mm	440mm x 44mm x 380mm	440mm x 44mm x 380mm	440mm x 44mm x 380mm
Relative Humidity	5%~95%, non-condensing			
Temperature	Working 0°C~50°C, storage-40°C~70°C			
Power Supply	AC:100~240VAC, 50~60Hz			
Power Consumption	<40W	<55W	<450W	<840W
PoE	NA	NA	IEEE 802.3af IEEE 802.3at Total PoE power: 370W	IEEE 802.3af IEEE 802.3at Total PoE power: 740W
Main Features				
L2 Features	IEEE802.3(10Base-T), IEEE802.3u(100Base-TX), IEEE802.3z(1000BASE-X), IEEE802.3ab(1000Base-T), IEEE802.3ae(10GBase), IEEE802.3x, IEEE802.3ak(10GBASE-CX4) Port loopback detection LLDP and LLDP-MED UDLD 802.3ad LACP, max 128 group trunks with max 8 ports for each trunk LACP load balance ERPS (G.8032)			
	N:1 Port Mirroring RSPAN			
	IEEEE802.1d(STP) IEEEE802.1w(RSTP) IEEEE802.1s(MSTP) Root Guard BPDU Guard BPDU Tunnel			
	802.1Q, 4K VLAN MAC VLAN, Voice VLAN, PVLAN, Protocol VLAN, Multicast VLAN QinQ, Flexible QinQ GVRP N:1 VLAN Translation Broadcast / Multicast / Unicast Storm Control			
	IGMP v1/v2/v3 Snooping and L2 Query ND Snooping MLDv1/v2 Snooping Port Security Flow Control: HOL, IEEE802.3x Bandwidth Control			

PRODUCT SPECIFICATIONS

Hardware Specifications

Main Features	AP-SG6500E L3 10G Series
L3 Features	Static Routing, RIPv1/v2, ISIS, OSPFv2, BGP4 OSPFv3, BGP4+ OSPF multiple processes VRF-Lite LPM Routing Policy-based routing (PBR) for IPv4 and Ipv6 VRRP URPF, ECMP BFD
	IGMP v1/v2/v3, IGMP Proxy, Static Multicast Route Multicast Receive Control Illegal Multicast Source Detect ARP Guard, Local ARP proxy, Proxy ARP, ARP Binding, Gratuitous ARP, ARP Limit Anti ARP Cheat, Anti ARP Scan DNS Client, DNS Relay GRE Tunnel
Ipv6	6to4 Tunnel, Configured Tunnel, ISATAP Tunnel, GRE Tunnel ICMPv6, ND, DNSv6 IPv6 LPM Routing, IPv6 Policy-based Routing (PBR) IPv6 VRRPv3, IPv6 URPF, IPv6 RA RIPng, OSPFv3, BGP4+ MLD Snooping, IPv6 Multicast VLAN MLDv1/v2, IPv6 Anycast RP, IPv6 ACL, IPv6 QoS
QoS	8 Queues SP, WRR, SP+WRR WRED Traffic Classification Based on 802.1p COS, ToS, DiffServ DSCP, ACL, port number Traffic Policing PRI Mark,Remark
ACL	IP ACL, MAC ACL, IP-MAC ACL Standard and Expanded ACL Based on source/destination IP or MAC, IP Protocol, TCP/UDP port, DSCP, ToS, IP Precedence), VLAN, Tag/Untag, CoS Redirect and statistics Rules can be configured to port, VLAN, VLAN routing interfaces Time Ranged ACL ACL rules can be configured to port, VLAN
Security	802.1x AAA Port, MAC-based authentication Accounting based on time length and traffic Guest VLAN and auto VLAN RADIUS for IPv4 and Ipv6 TACACS+ for IPv4 and Ipv6 MAB
DHCPv4/v6 Traffic Monitor	DHCP Server/Client for IPv4/IPv6 DHCP Relay/Option 82 DHCP Snooping/Option 82
Traffic Monitor	sFlow Traffic Analysis
Security Network Management	CLI, WEB, Telnet, SNMPv1/v2c/v3 through IPv4 and IPv6 Syslog and external Syslog Server HTTP SSL SNMP MIB, SNMP TRAP FTP/TFTP SNTP/NTP RMON 1,2,3,9 Authentication by Radius/TACACS SSH v1/v2 Dual firmware images/ Configuration files 802.3ah OAM, 802.1ag OAM
Data Center Features	VSF (Virtual Switch Framework)

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