**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-30T6XG-R1** | • 24*10/100/1000Base-T + 6*10GbE(SFP+)<br>• 1 console, 1 USB, 1 RJ45 management port<br>• AC power supply<br>• Switching capacity: 168Gbps<br>• Forwarding rate: 125Mpps |
|  **AP-SG6500E-30T6XG-P-R1** | • 24*10/100/1000Base-T PoE + 6*10GbE(SFP+)<br>• 1 console, 1 USB, 1 RJ45 management port<br>• PoE/PoE+ up to 370w<br>• AC power supply<br>• Switching capacity: 168Gbps<br>• Forwarding rate: 125Mpps |
|  **AP-SG6500E-54T6XG-R1** | • 48*10/100/1000Base-T + 6*10GbE(SFP+)<br>• 1 console, 1 USB, 1 RJ45 management port<br>• AC power supply<br>• Switching capacity: 216Gbps<br>• Forwarding rate: 161Mpps |
|  **AP-SG6500E-54T6XG-P-R1** | • 48*10/100/1000Base-T PoE + 6*10GbE(SFP+)<br>• 1 console, 1 USB, 1 RJ45 management port<br>• PoE/PoE+ up to 740w<br>• AC power supply<br>• Switching capacity: 216Gbps<br>• 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-30T6XG-R1 | AP-SG6500E-54T6XG-RI | AP-SG6500E-30T6XG-P-R1 | AP-SG6500E-54T6XG-P-R1 |
|---|---|---|---|---|
| Physical port | 24*10/100/1000Base-T<br>+ 6*10GbE(SFP+)<br>Auto-MIDX | 48*10/100/1000Base-T<br>+ 6*10GbE(SFP+)<br>Auto-MIDX | 24*10/100/1000Base-T<br>PoE + 6*10GbE(SFP+)<br>Auto-MIDX | 48*10/100/1000Base-T<br>PoE + 6*10GbE(SFP+)<br>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<br>IEEE 802.3at<br>Total PoE power: 370W | IEEE 802.3af<br>IEEE 802.3at<br>Total PoE power: 740W |
| **Main Features** | | | | |
| L2 Features | IEEE802.3(10Base-T), IEEE802.3u(100Base-TX), IEEE802.3z(1000BASE-X), IEEE802.3ab(1000Base-T),<br>IEEE802.3ae(10GBase), IEEE802.3x, IEEE802.3ak(10GBASE-CX4)<br>Port loopback detection<br>LLDP and LLDP-MED<br>UDLD<br>802.3ad LACP, max 128 group trunks with max 8 ports for each trunk<br>LACP load balance<br>ERPS (G.8032) | | | |
| | N:1 Port Mirroring<br>RSPAN | | | |
| | IEEE802.1d(STP)<br>IEEE802.1w(RSTP)<br>IEEE802.1s(MSTP)<br>Root Guard<br>BPDU Guard<br>BPDU Tunnel | | | |
| | 802.1Q, 4K VLAN<br>MAC VLAN, Voice VLAN, PVLAN, Protocol VLAN, Multicast VLAN<br>QinQ, Flexible QinQ<br>GVRP<br>N:1 VLAN Translation<br>Broadcast / Multicast / Unicast Storm Control | | | |
| | IGMP v1/v2/v3 Snooping and L2 Query<br>ND Snooping<br>MLDv1/v2 Snooping<br>Port Security<br>Flow Control: HOL, IEEE802.3x<br>Bandwidth Control | | | |

## PRODUCT SPECIFICATIONS

### Hardware Specifications

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

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