# DATASHEET

**ANDA TELECOM**

*Turning Copper into Gold*

# AT-S3900-48M6X

⊘ **Varied Service Characteristics Versatile IPv6 Solution Complete Security Mechanism**

⇄ **Carrier-Level High Reliability Full Layer-3 Functions**

▦ **Advanced Hardware Architecture and Industry-leading Port Density**

▥ **Supports Maximum 48 GE Ports and 6 10GE SFP+ Uplink Ports**

## Innovative Virtual Cluster Switching Technique

**ATVSS (ANDA TELECOM Virtual Switch System):**

ATVSS makes full use of each link in the physical devices, which avoids STP blocking the link and protects the original link to the maximum extent.

**Improved Performance:**

virtualize multiple physical devices into one. The performance, reliability and management of the virtual system are superior to the physical ones.

**High Reliability:**

Based on the advanced distribution mechanism and efficient cross-physical link aggregation link function, the logic control plane, service control plane and service data plane are separated. Thus, the device can support continuous layer-3 routing forwarding, avoiding service interruption as a result of a single point of failure.

**Easy Management:**

ATVSS realizes single IP management, greatly improving the networking efficiency and lowering the operating cost.

## Product Overview

ANDA TELECOM S3900 Series is a new generation of aggregation 10G switches... It is targeted at the IP MAN (metropolitan area network), campus networks and enterprise networks. It is developed on the basis of high-performance hardware and AT ROS software platform with ANDA TELECOM own independent intellectual property rights. It supports multiple services like IPv6, VPN and network security based on L2/L3/L4 wire-speed switching service. It also supports nonstop upgrade, continuous forwarding, and graceful restarting and redundancy protection.

ANDA TELECOM S3900 Series has model:- AT-S3900-48P6X. It supports up to 48 gigabit ports and 6 10GE ports.

# Product Characteristics

## Carrier-Level QoS Policies

Supports priority retagging and complicated flow classification based on VLAN, MAC, source address, destination address, IP or priority to better streamline carrier's services. Supports flexible bandwidth control policies and supports port-/flow-based flow limit, and ensuring the line speed forwarding of each port to make sure the high quality of video, audio and data services. Supports 8 priority queues by each port. Supports multiple queueschedule algorithms such as SP, WRR, and SP+WRR.

## Varied Service Characteristics

Supports layer-2 and layer-3 multicast routing protocol, which enable the device can access to IPTV, HD video surveillance and HD video conference. Supports layer-3 routing protocol and super-large routing table capacity, which enables the device is available in large campus networks, enterprise networks and industry networks.

### Versatile IPv6 Solution

Supports the IPv6 protocol suite, IPv6 neighbor discovery, ICMPv6, path MTU discovery, DHCPv6, etc. Supports Ping, Trace route, Telnet, SSH, ACL. Supports MLD, MLD Snooping, IPv6 static routing, RIPng, OSPFv3 and BGP4+, etc. Supports IPv6 tunnel: manual tunnel, automatic tunnel, GRE tunnel, 6to4, ISATAPSupports IPv4 transits to IPv6: IPv6 manual tunnel, automatic tunnel, 6 to 4 tunnel, ISATAP tunnel.

### Industrial Ethernet Ring with Zero Delay and Zero Packet Loss

Supports industry-level EAPS and ERPS, and their protection recovery time is less than 50ms. Their high reliability is represented by the null packet loss, which has been proved by many years of application in the Grid, rail transportation and defense systems.

### Intelligent PoE+

S3900-48P6X supports IEEE 802.3af/at PoE standard, and power mapping scales up to a maximum of 760W of PoE+ power; S3900-48P6X supports PoE non-stop power supply. The PoE+ power is maintained during a switch reload; S3900-48P6X supports manual and dynamic PoE power allocation;S3900-48P6X supports up to 6KV thunder-proof of the PoE port and power supply;

## Complete Security Mechanism

Equipment-Level Security: The advanced hardware infrastructure design realizes the level-based packet schedule and packet protection, prevents DoS-/TCP-related SYN Flood, UDP Flood, Broadcast Storm or large traffic attacks, and supports level-based command line protection, endowing different levels of users with different management permissions. Security Authentication Mechanism: IEEE 802.1x, Radius and AT Tacacs+ Enhanced ServiceSecurity Mechanism: supports the plaintext or MD5 authentication of relevant routing protocol, URPF, deep inspection of hardware packet, control packet and data packet and filtering technology.

## Innovative Energy-Saving Design

Intelligent power management: The power system of S3900 series supports real-time monitoring the device and the slow-start. It is also power-saving. Intelligent fan management system: The fan system of S3900 Series supports automatic speed regulation, which efficiently slow the fan speed and mitigate the noise. Complies with the international standard IEEE 802.3a

## Flexible and Convenient Management and Maintenance

Supports management modes such as the console port, Telnet, SSH, etc.
Supports the WEB management mode, which is easy and efficient so that it makes installation and debugging convenient. Supports TFTP-patterned file upload/download management.
Supports ISSU (In-Service Software Upgrade).
Supports SNMP and ANDA TELECOM NMS smart network management platform to realize automatic equipment discovery, network topology management, equipment configuration management, performance data statistics and analysis and trouble management.

## Model lists

# AT-S3900-48M6X

- 24GE SFP Ports
- 24GE TX Ports
- 6 10GE/GE SFP+ Ports

# Specifications

| Item | | AT-S3900- 48M6X |
|------|------|------|
| GE Interface | TX | 24 |
| | SFP | 24 |
| 10GE Interface | | 6 10GE/GE |
| Console | | 1 RJ45 Port |
| Backplane | | 216 Gbps |
| Forwarding rate | | 162 Mpps |
| **Physical Specifications** | | |
| Chassis Dimensions (WxDxH mm) | | 440x350x44 |
| Package Dimensions (WxDxH mm) | | 576x448x94 |
| **Power** | | |
| Power supply AC: 100V-240V (hot-swap) 50Hz±10% | | 150W |
| Total output BTU (1000BTU/H=293W) | | 511.94 |
| Noise@25°C(dBA) | | 45 |
| MTBF(H) | | >200,000 |
| Forwarding mode | | Store-forward |
| Flash (MB) | | 16 |
| DRAM (MB) | | 512 |
| MAC | | 32K |
| Buffer size(MB) | | 2 |
| Jumbo frame | | 9K |
| Routing table | IPv4 | 12K |
| | IPv6 | 6K |
| ARP table | IPv4 | 12K |
| | IPv6 | 2K |
| Total SVI | | 1K |

# Features

## VLAN
- 4K Active VLAN,
- QinQ & Selective QinQ,
- GVRP,
- Voice-VLAN

## Spanning Tree
- 802.1D (STP),
- 802.1W (RSTP) and 802.1S (MSTP) BPDU guard,
- root guard and loopback guard

## Multicast
- PIM-SM, PIM-DM, IGMP v1/v2/v3,
- IGMP Snooping, IGMP Fast Leave,
- MVR, IGMP filter

## IPv4
- Static routing, RIP v1/v2, OSPF, BGP, PBR, ECMP
- BFD for OSPF, BGP

## DHCP
- DHCP server/relay/client
- DHCP snooping/option82

## MPLS
- Multi-VRF

## IPv6
- ICMPv6, DHCPv6, ACLv6 and IPv6 Telnet
- IPv6 neighbor discovery, Path MTU discovery
- MLD V1/V2, MLD snooping
- IPv6 Static Routing, RIPng, OSPFv3, BGP4+
- Manual tunnel, ISATAP tunnel, 6 to 4 tunnel

## QoS
- CAR, HQoS, MAC/IP/TCP/UDP/VLAN/COS/DSCP/TOS based QoS, 802.1P/DSCP priority re-labeling, SP, WRR, and "SP+WRR", Tail-Drop, WRED, flow monitoring and traffic shaping

## Security
- Port isolation, Port security, and "IP+MAC+port" binding, MAC sticky, DAI & IP source guard, PPPoE+
- IEEE 802.1x, Radius and AT Tacacs+
- L2/L3/L4 ACL flow identification and filtration Anti-attack from DDoS, TCP's SYN Flood, UDP Flood, etc.
- Broadcast/multicast/unknown unicast storm-control
- MD5, SHA-256, RSA-1024, AES256, etc.

## Reliability
- Static/LACP link aggregation, Interface backup
- ATVSS virtual-stacking
- EAPS and ERPS
- URPF, LLDP
- ISSU
- VRRP
- 1+1 power backup

## Management
- Console, Telnet, SSH v1/2, HTTP, HTTPS
- SNMP v1/v2/v3, RMON
- TFTP, FTP, SFTP
- NTP, SPAN, RSPAN
- sFlow

## Accessories
- Power cord, rack mount kits, console cable

## Environment
- Operating temperature/humidity: 0°C -50°C ,10%-90% non-condensing
- Storage temperature/humidity: -20°C -70°C , 5%-95% non-condensing

## Certification
- CE, FCC, ROHS

# Ordering Information

| Item | Description |
| --- | --- |
| **S3900 series switch** | |
| **S3900-48M6X** | Ethernet routing switch with 48 GE and 6 10GE ports (1 RJ45 console port, 24 GE TX ports, 24 100M/1000M SFP ports, 6 10GE/GE SFP+ ports; 2 power slots with 1 hot-swap AC220V power supply; the cooling fan, 1U, standard 19-inch rack-mounted installation) |