# S2900-P
# L3-LITE SERIES

Varied Service Characteristics Versatile IPv6 Solution Complete Security Mechanism

Carrier-Level High Reliability
Layer-3 Routing Functions

Advanced Hardware Architecture and Industry-leading Port Density

Supports Maximum 48 Gigabit PoE+ Ports and 6 10GE SFP+ Uplink Ports

## Product Overview

S2900-P L3-lite Series is a next-generation aggregation 10GE switch introduced by BDCOM. It is targeted at the IP MAN(metropolitan area network), government and enterprise networks, Internet café and diskless working environment. It is developed on the basis of high performance hardware and BDROS software platform with BDCOM own independent intellectual property rights.It supports functions such as powerful ACL,flexible QinQ, 1:1 or N:1 VLAN switching, Ethernet OAM, carrier-level QoS and industry-level 10GE Ether-ring, ensuring this switch series meets application requirements in all kinds of complicated sites. It also supports layer-3 routing protocol.
BDCOM S2900-P L3-lite Series has 2 models: S2900-24P4X, S2900-48P6X）

## Product Characteristics

### Innovative Virtual Cluster Switching Technique

Innovative BVSS (BDCOM Virtual Switch System): S2900-P L3-lite Series virtualizes multiple physical devices into one. The performance, reliability and management of the virtual system are superior to the physical ones. Improved Performance: BVSS 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. 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, S2900-P L3-lite Series can support continuous layer-3 routing forwarding, avoiding service interruption as a result of a single point of failure.Easy Management:  BVSS realizes single IP management, greatly improving the networking efficiency and lowering the operating cost.

# Product Characteristics

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

Supports industry-level EAPS and their protection shift 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.

## Telecom-Level Ethernet Switch

Supports the telecom-level Ethernet-ring protection protocol with a protection shift time of less than 50ms, STP/RSTP/MSTP, backup of active and standby uplinks and LACP link aggregation to cater to the requirements of high reliability of carriers.

Support Ethernet standard 802.3u, 802.3x, 802.3ad, 802.1d, 802.1p, 802.1q, 802.1w, 802.1ad.

Support system status LED, port dynamic LED.

Provides the perfect Ethernet OAM mechanism to monitor the network running status in real time for rapid trouble locating and detection.

Supports powerful ACL functions to access and control L2-L7 data based on physical port, VLAN, MAC, IP and protocol port ID, and providing carriers flexible and various policy control methods.

Supports In-Service Software Upgrade (ISSU) to ensure the unremitting data forwarding during system upgrade.

Supports various L2 multicast functions, including IGMP-Snooping, fast-leave and trans-vlan multicast copy.

## 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 BDCOM NMS smart network management platform to realize automatic equipment discovery, network topology management, equipment configuration management, performance data statistics and analysis and trouble management.

## 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 provides 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 queue schedule algorithms such as SP, WRR, and SP+WRR.

## Versatile IPv6 Solutions

Supports the IPv6 protocol suite, IPv6 neighbor discovery, ICMPv6, path MTU discovery, etc.

Supports Ping, Traceroute, Telnet, SSH, ACL and so like on the basis of IPv6, meeting IPv6 networks' equipment management requirements and service control requirements.

## Perfect Security Mechanisms

Equipment-level security: The advanced hardware infrastructure design realizes the level based packe schedule and packet protection prevents DoS-/TCP-related: SYN flood, UDP flood,broadcast stormor large traffic attacks,and supports level-based command line protection, endowing different levels of users with different management permissions.

Supports perfect security authentication mechanisms: IEEE8021xRadius andBDTacacst.

Supports storm/multicast/unicast limit to ensure the normal running of equipment in harsh network conditions.

Supports a perfect ring detection mechanism to ensure the long-term stable running of network.suppots port isolation within the same VLANDHCP-Snooping and IP plus MAC plus Port binding for ensuring user data security.

## Intelligent PoE+

S2900-P series supports IEEE 802.3af/at PoE standard, and PoE power budget ups to a maximum of 740W; S2900-P series supports PoE non-stop power supply, the PoE+ power is maintained during a switch reload; S2900-P series supports manual and dynamic PoE power allocation;S2900-P series supports up to 6KV thunder-proof of the PoE port and power supply.
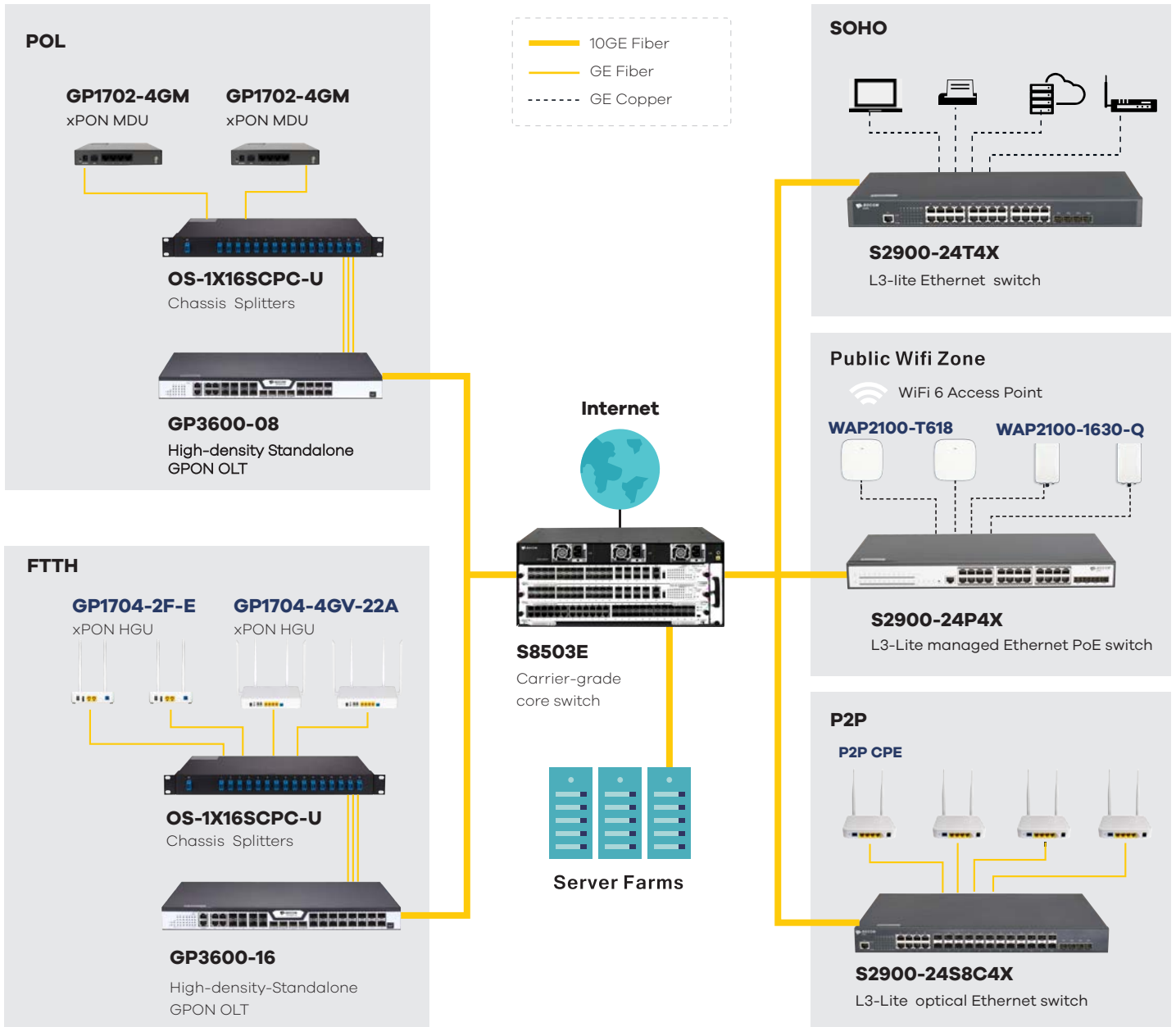
# Model Lists

## S2900-24P4X

- 24-Port Gigabit PoE+
- 4-Port 10G/GE SFP+
- 370W PoE Power Budget

## S2900-48P6X

- 48-Port Gigabit PoE+
- 6-Port 10G/GE SFP+
- 370W AC PoE Power Budget
- 740W DC PoE Power Budget

# Application Diagram

### POL

**GP1702-4GM**
xPON MDU

**GP1702-4GM**
xPON MDU

**OS-1X16SCPC-U**
Chassis Splitters

**GP3600-08**
High-density Standalone
GPON OLT

### FTTH

**GP1704-2F-E**
xPON HGU

**GP1704-4GV-22A**
xPON HGU

**OS-1X16SCPC-U**
Chassis Splitters

**GP3600-16**
High-density-Standalone
GPON OLT

— 10GE Fiber
— GE Fiber
---- GE Copper

**Internet**

**S8503E**
Carrier-grade
core switch

**Server Farms**

### SOHO

**S2900-24T4X**
L3-lite Ethernet switch

### Public Wifi Zone

WiFi 6 Access Point

**WAP2100-T618**   **WAP2100-1630-Q**

**S2900-24P4X**
L3-Lite managed Ethernet PoE switch

### P2P

**P2P CPE**

**S2900-24S8C4X**
L3-Lite optical Ethernet switch

# Product Specifications

| Item | | S2900-24P4X | S2900-48P6X |
|---|---|---|---|
| Gigabit PoE+ | | 24 | 48 |
| 10G/GE SFP+ | | 4 | 6 |
| Console(RJ45) | | 1 | 1 |
| Backplane(Gbps) | | 128 | 216 |
| Forwarding rate (Mpps with 64 bytes) | | 96 | 162 |
| Chassis | Dimensions (WxDxH)(mm) | 440x210x44 | 440x280x44 |
| | Weight (KG)(empty) | 3 | 5.2 |
| Package | Dimensions (WxDxH)(mm) | 555x295x88 | 576x448x94 |
| | Weight(KG) | 4.1 | 6.1 |
| Power consumption | no-load | < 25W | < 25W |
| | full-load | <35W(without PoE) | < 48W(without PoE) |
| Power supply | AC: 100V-240V DC: 36-72V | 410W | 450W AC and 800W DC |
| Total output BTU (1000BTU/H=293W) | | 1392.49 | 1535.84@AC 2730.38@DC |
| Fan number | | 2 | 2 |
| Noise@25°C（dBA） | | 37.5 | 45 |
| MTBF(H) | | >200,000 | >200,000 |
| Forwarding mode | | Store-forward | Store-forward |
| Flash (MB) | | 16 | 16 |
| DRAM (MB) | | 256 | 512 |
| MAC | | 16K | 32K |
| Buffer size(MB) | | 1.5 | 1.5 |
| Interface vlan | | 64 | 64 |
| Routing table | | 512 | 512 |
| Jumbo frame | | 9K | 9K |

# Features

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

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

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

## IP
- Static route,
- IPv4/v6 dual stack

## IPV6
- ICMPv6, DHCPv6, ACLv6 and Ipv6 Telnet
- IPv6 neighbor discovery,Path MTU discovery
- MLD V1,MLD snooping IPv6 Static Routing,RIPng, OSPFv3
- Manual tunnel,ISATAP tunnel,6 to 4 tunnel

## Certification
- CE, FCC, ROHS

## 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
- DHCP Snooping and option 82, DAI & IP source guard, PPPoE+,
- IEEE 802.1x, Radius and BDTacacs+
- L2/L3/L4 ACL flow identification and filtrationAnti-attack from DDoS, TCP's SYN Flood, UDP Flood, etc. Broadcast/multicast/unknown unicast storm-control
- MD5, SHA-256, RSA-1024, AES256, etc.

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

## Reliability
- Static/LACP link aggregation, Interface backup
- EAPS and ERPS
- ISSU uninterrupted system upgrade
- BVSS,ups to 16-units per stack
- VRRP
- UDLD

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

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

## Accessories
- Power cord,rackmount kits, console cable

# Ordering Information

| Item | Description |
|------|-------------|
| **S2900-P L3-lite Series switch** | |
| S2900-24P4X | 24-Port Gigabit PoE+ 4-Port 10G SFP+ L3-lite Stackable Managed Switch (single AC-220V power supply, 370W PoE budget; with cooling fan; 1U; standard 19-inch rack-mounted installation) |
| S2900-48P6X | 48-Port Gigabit PoE+ 6-Port 10G SFP+ L3-lite Stackable Managed Switch (AC-220V+DC-48V power supplies, 370W AC POE budget, 740W DC POE budget, with cooling fan; 1U; standard 19-inch rack-mounted installation) |
| **Optical modules** | |
| **10GE optical modules** | |
| SFP+TX | 10GE SFP+-to-RJ45 module |
| SFP+SX | 10GE SFP+ multi-mode (300m, 850nm, LC) |
| SFP+LX-10 | 10GE SFP+ single-mode (10Km, 1310nm, LC, DDM) |
| SFP+LX-20 | 10GE SFP+ single-mode (20Km, 1310nm, LC, DDM) |
| SFP+LX-40 | 10GE SFP+ single-mode (40Km, 1310nm, LC, DDM) |
| SFP+LX-80 | 10GE SFP+ single-mode (80Km, 1550nm, LC, DDM) |
| SFP+LX-SM-1270-10<br>SFP+LX-SM-1330-10 | 10GE SFP+ single-mode, single-fiber (10Km, TX1270/RX1330, LC, DDM)<br>10GE SFP+ single-mode, single-fiber (10Km,TX1330/RX1270, LC, DDM) |
| SFP+LX-SM-1270-20<br>SFP+LX-SM-1330-20 | 10GE SFP+ single-mode, single-fiber (20Km, TX1270/RX1330, LC, DDM)<br>10GE SFP+ single-mode, single-fiber (20Km,TX1330/RX1270, LC, DDM) |
| SFP+LX-SM-1270-40<br>SFP+LX-SM-1330-40 | 10GE SFP+ single-mode, single-fiber (40Km, TX1270/RX1330, LC, DDM)<br>10GE SFP+ single-mode, single-fiber (40Km,TX1330/RX1270, LC, DDM) |
| **GE Optical Modules** | |
| GSFP-TX-B | 10GE SFP+-to-RJ45 module |
| GSFP-SX-D | GE SFP multi-mode (500m, 850nm, LC, DDM) |
| GSFP-LX-10-D | GE SFP single-mode (10Km, 1310nm, LC, DDM) |
| GSFP-LX-20-D | GE SFP single-mode (40Km, 1310nm, LC, DDM) |
| GSFP-LX-40-D | GE SFP single-mode (40Km, 1310nm, LC, DDM) |
| GSFP-ZX-80-D | GE SFP single-mode (80Km, 1550nm, LC, DDM) |
| GSFP-ZX-120-D | GE SFP single-mode (120Km, 1550nm, LC, DDM) |
| GSFP-LX-SM1310-10-BIDI<br>GSFP-LX-SM1550-10-BIDI | GE SFP single-mode, single fiber (10Km, TX1310/RX1550, LC, DDM)<br>GE SFP single-mode, single fiber (10Km, TX1550/RX1310, LC, DDM) |
| GSFP-LX-SM1310-20-BIDI<br>GSFP-LX-SM1550-20-BIDI | GE SFP single-mode, single fiber (20Km, TX1310/RX1550, LC, DDM)<br>GE SFP single-mode, single fiber (20Km, TX1550/RX1310, LC, DDM) |
| GSFP-LX-SM1310-40-BIDI<br>GSFP-LX-SM1550-40-BIDI | GE SFP single-mode, single fiber (40Km, TX1310/RX1550, LC, DDM)<br>GE SFP single-mode, single fiber (40Km, TX1550/RX1310, LC, DDM) |
| GSFP-LX-SM1490-80-BIDI<br>GSFP-LX-SM1550-80-BIDI | GE SFP single-mode, single fiber (80Km, TX1490/RX1550, LC, DDM)<br>GE SFP single-mode, single fiber (80Km, TX1550/RX1490, LC, DDM) |
| GSFP-LX-SM1490-120<br>GSFP-LX-SM1550-120 | GE SFP single-mode, single fiber (120Km, TX1490/RX1550, LC, DDM)<br>GE SFP single-mode, single fiber (120Km, TX1550/RX1490, LC, DDM) |

\* No logical restriction for operation with third party SFPs