

# L3 Managed Gigabit Switch with 10G uplink

## 48-Port Gigabit + 4 Ports 10G SFP+

L3-XGS4804

airlive®



|                        |                         |                  |           |
|------------------------|-------------------------|------------------|-----------|
| Rich L3 Features       | L3 DHCP Server/Relay    | L3 DHCP Snooping | ACL, ERPS |
| L3 OSPF Routes Support | IPv4/v6 L3 Static Route | 10G SFP+ Uplink  |           |

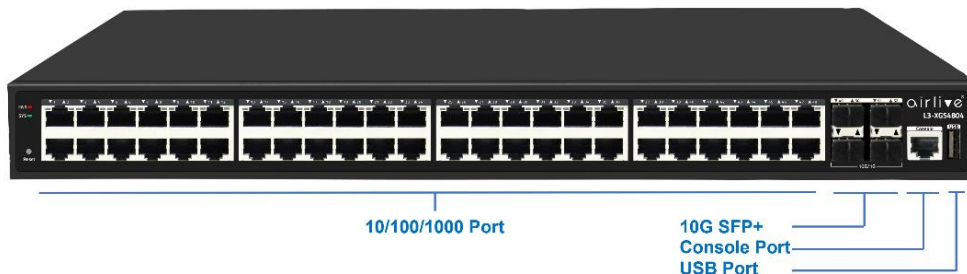
## Overview

### Rich L3 Features

L3-XGS4804 series offers high performance hardware IP routing. Static route, OSPF, and RIP provide dynamic routing by exchanging routing information with other Layer 3 switches and routers. With L3-XGS4804 series, customers could easily achieve a Policy-based Route (PBR), which is important when they need Switch to switch application and short network heal time.

### What Is a Layer 3 Switch?

A Layer 3 switch is a specialized hardware device used in network routing. Layer 3 switches technically have a lot in common with typical routers, and not only in physical appearance. Both can support the same routing protocols, inspect incoming packets, and make dynamic routing decisions based on the source and destination addresses inside. One of the main advantages of a Layer 3 switch over a router is in the way routing decisions are performed. Layer 3 switches are much low network latency since packets don't have to take additional steps through a router.



## Features

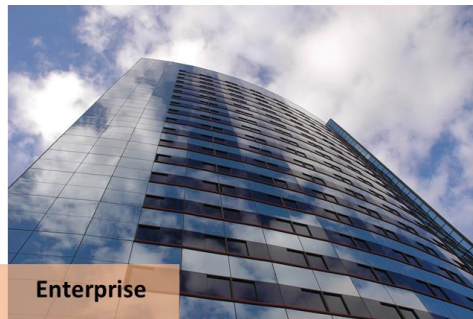
- Rich Layer 3 Features
- Fully L2 features provide easier manageability, security and QoS
- ITU-T G.8032 Ethernet Ring Protection Switching (ERPS)
- SNMP, WEB, CLI, SSH2.0, Telnet
- VLAN Division Voice
- IPv4/IPv6 L3 static route
- OSPF Routes dynamic routing
- SFP+ 10Gbps Fiber Long Distance
- Voice VLAN Support
- Clear Statues display including traffic, CPU, per-port status
- Web-UI for easy management; CLI and Command Script for advance setting; SNMP used for popular network tools management.

## Major Specifications

- 48 x 10/100/1000
- 4 x 10G SFP+
- Rich Layer 3 Features
- L3 DHCP Server/Relay
- L3 DHCP Snooping
- IPv4/IPv6 L3 static route
- OSPF Routes dynamic routing
- Surge Protection 6KV , ESD Protection 8KV
- Authentication: 802.1x, AAA
- DHCP Snooping prevents unauthorized router installed

## Applications of Layer-3 Switches

- Layer3 Switch is widely used in data centers and universities , factory enterprise. where there is a very big setup of computer networking. Owing to its features like static and dynamic routing and its fast-switching speed than a router, it is used in LAN connectivity for interconnection of several VLAN and LAN networks.
- L3-XGS4804 have the skills to offload the overloaded routers. This can be done by configuring a layer-3 switch, each with a main router in a wide area networking scenario so that the switch can manage all the local level VLAN routing.
- The layer-3 switch in combination with a number of layer-2 switches supports more users to connect on the network without the need for implementation of an extra layer-3 switch and more bandwidth. Thus, it is widely implemented in universities and small-scale industries. In case if the number of end users on a network platform increases, then without any enhancement of the network, it can be accommodated in the same running scenario easily.
- A layer-3 switch is smart enough to handle and manage the routing and traffic controlling of locally connected servers and end devices utilizing its high bandwidth.



# L3 Managed Gigabit Switch with 10G uplink

## 48-Port Gigabit + 4 Ports 10G SFP+

L3-XGS4804

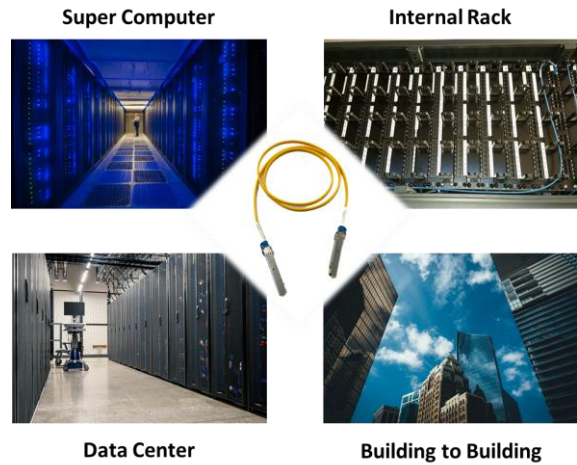


### 10G Performance and Scalability

With high switching capacity, L3-XGS4804 support wire-speed L2/L3 forwarding and high routing performance for IPv4 and IPv6 protocols.

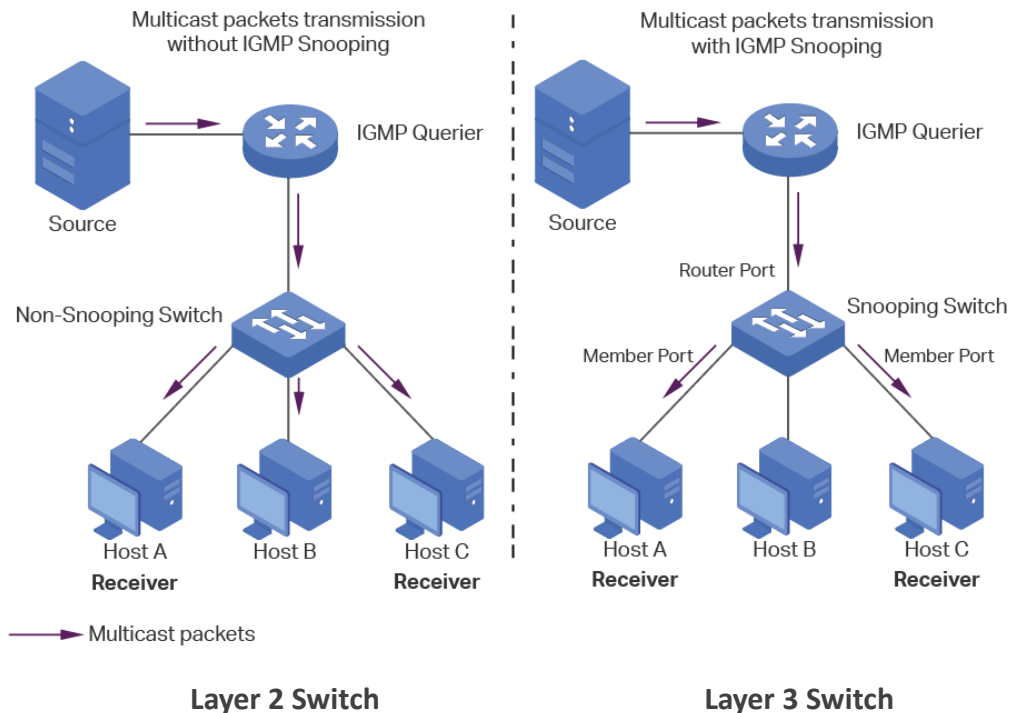
The 10 Gigabit Ethernet connectivity of L3-XGS4804 is accomplished via a hot-pluggable 10 Gigabit SFP+ transceiver which supports distance up to 300 meters over multimode fiber and 10 to 40km over single-mode fiber (The distance depends on the optical module chosen).

### 10G SFP+ Connect Applications



### Strong L3 IGMP Snooping Multicast

L3 multicast protocols is compliant with IGMPv1/v2/v3 and supports abundant multicast features such as IGMP v2/v3 snooping and fast leave. With Multicast VLAN Register (MVR), multicast receiver/sender control and illegal multicast source detect functions; L3-XGS4804 fiber series provides a great application experience for the customer.



## L3 OSPF Routes Management

Open shortest path first (OSPF) is a link-state routing protocol that is used to find the best path between the source, which is generally used in the same routing domain. Here, routing domain refers to an autonomous system (as), which refers to a group of networks that exchange routing information through a unified routing policy or routing protocol. In this as, all OSPF routers maintain the same database describing the as structure, which stores the state information of the corresponding links in the routing domain. It is through this database that OSPF routers calculate their OSPF routing tables.

As a link state routing protocol, OSPF transmits link state multicast data LSA (link state advertisement) to all routers in a certain area, which is different from distance vector routing protocol. The router running distance vector routing protocol passes part or all of the routing tables to its neighboring routers.

### OSPF Routes Info

OSPF Routes status  Enable

Apply

### Area Network Setting table

Showing [All] entries      Showing 0 to 0 of 0 entries

| Area Id          | Network IPv4 Address | Network Mask |
|------------------|----------------------|--------------|
| 0 results found. |                      |              |

First Previous 1 Next Last

Add Delete

### Area Network Setting table

|                      |                                      |
|----------------------|--------------------------------------|
| Area Id              | <input type="text" value="A.B.C.D"/> |
| Network IPv4 Address | <input type="text"/>                 |
| Network Mask         | <input type="text"/>                 |

Apply Close

## L3 DHCP Snooping Support

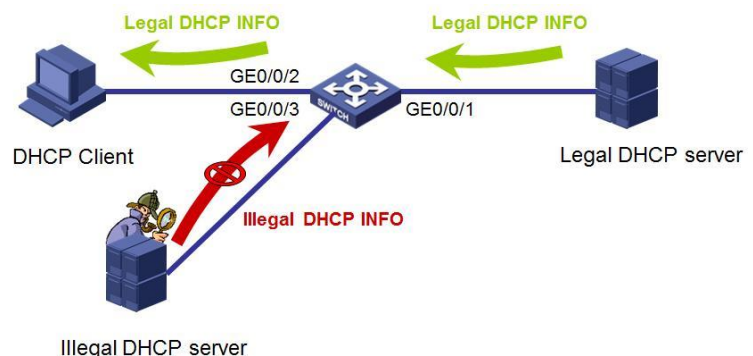
Prevention against illegal Router(DHCP Server) attacks or sending DHCP information.

### DHCP Snooping Configuration

Snooping Mode: Enabled

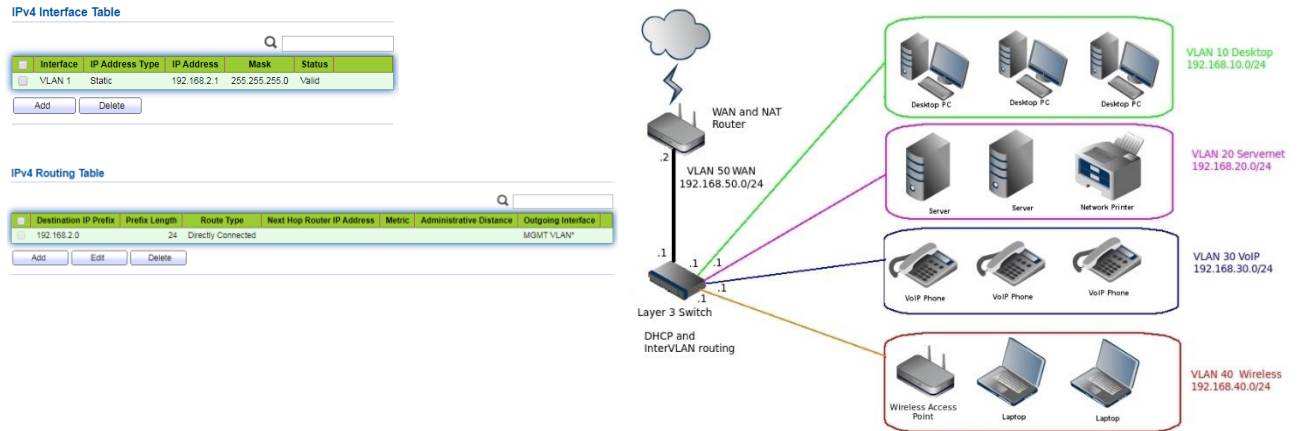
### Port Mode Configuration

| Port | Mode      |
|------|-----------|
| *    | <>        |
| 1    | Trusted   |
| 2    | Untrusted |
| 3    | Trusted   |
| 4    | Trusted   |
| 5    | Trusted   |
| 6    | Untrusted |
| 7    | Trusted   |
| 8    | Trusted   |
| 9    | Trusted   |
| 10   | Trusted   |



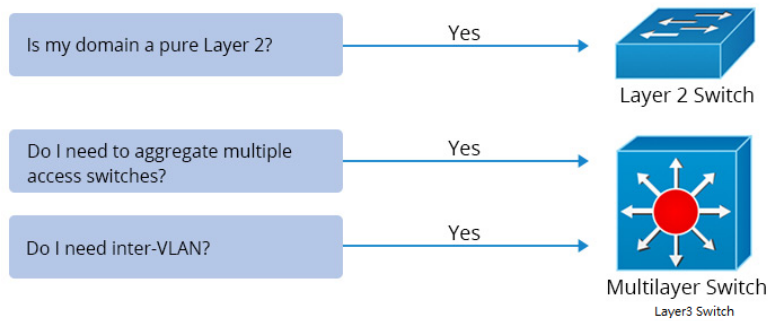
## L3 VLAN IP Routing Interface Management

The L3-XGS4804 provides 3 layers of VLAN interface, which is used to communicate with network layer devices. VLAN interface is a network layer interface, which can be configured with IP address. Before creating VLAN interface, the corresponding VLAN should be created first. With the help of VLAN interface, switches can communicate with other network layer devices.



## Layer 2 vs Layer 3 Switch

The layer 2 and Layer 3 differs mainly in the routing function. A Layer 2 switch works with MAC addresses only and does not care about IP address or any items of higher layers. Layer 3 switch, or multilayer switch, can do all the job of a layer 2 switch and additional static routing and dynamic routing as well. That means, a Layer 3 switch has both MAC address table and IP routing table and handles intra-VLAN communication and packets routing between different VLANs. There is also layer 2+ (layer 3 Lite) switch that adds only static routing. Other than routing packets, layer 3 switches also include functions that require to understand the IP address information of data entering the switch, such as tagging VLAN traffic based on IP address instead of manually configuring a port. Layer 3 switches are increased in power and security as demanded.



| Item                             | Layer 2 Switch      | Layer 3 Switch   |
|----------------------------------|---------------------|--|
| Routing Function                 | Mac address only    | Supports higher routing such as static routing and dynamic routing |
| VLAN Tagging Based on IP Address | No                  | Yes  |
| Inter-VLAN                       | No                  | Yes  |
| Using Scenario                   | Pure Layer 2 domain | Aggregate multiple access switches                                 |

| Model  | AirLive L3-XGS4804  |
|--|---|
| <p><b>Hardware</b></p> <ul style="list-style-type: none"> <li>• <b>Device Interface:</b><br/>48 x 10/100/1000M Ports<br/>4 x 10G SFP+ Ports<br/>1 x RJ45 Console Port<br/>1 x USB Port</li> </ul> <p><b>Standard</b></p> <p>IEEE 802.3 : Ethernet MAC Protocol<br/>IEEE 802.3i : 10BASE-T Ethernet<br/>IEEE 802.3u : 100BASE-TX Fast Ethernet<br/>IEEE 802.3ab : 1000BASE-T Gigabit Ethernet<br/>IEEE 802.3z : 1000BASE-X Gigabit Ethernet (optical fiber)<br/>IEEE 802.3ae : 10G Ethernet (optical fiber)<br/>IEEE 802.3az : Energy Efficient Ethernet<br/>IEEE 802.3ad : Standard method for performing link aggregation<br/>IEEE 802.3x : Flow control<br/>IEEE 802.1ab : LLDP/LLDP-MED (Link Layer Discovery Protocol)<br/>IEEE 802.1p : LAN Layer QoS/CoS Protocol Traffic Prioritization(Multicast filtering function)<br/>IEEE 802.1q : VLAN Bridge Operation<br/>IEEE 802.1x : Client/Server Access Control and Authentication Protocol<br/>IEEE 802.1d : STP<br/>IEEE 802.1s : MSTP<br/>IEEE 802.1w : RSTP <ul style="list-style-type: none"> <li>• <b>LED Indicators:</b><br/>PWR(Power indicator),SYS(System lights),Link(Link light), Act(data light)</li> <li>• <b>Lighting Surge Protection:</b><br/>Surge 6KV · ESD 8KV</li> <li>• <b>Mechanical</b><br/>Solid metal 19" 1U rack-mountable, IP30</li> </ul> <p><b>Power</b></p> <ul style="list-style-type: none"> <li>• <b>Power Input:</b> AC100~240VAC</li> </ul> <p><b>Switch Architecture   Performance</b></p> <ul style="list-style-type: none"> <li>• <b>Switching Performance</b><br/>Bandwidth:176Gbps<br/>Packet Buffer Memory:131Mpps<br/>DDR SDRAM:512MB<br/>Flash Memory:32MB<br/>Package cache:12Mbit<br/>MAC Address:32K<br/>Jumbo frame:12Kbytes<br/>VLANs:4096<br/>MTBF:100000 hour</li> </ul> </p> | <p><b>Fiber Medium:</b></p> <p>Multi-mode Fiber: 50/125 · 62.5/125 · 100/140um<br/>Single-mode Fiber: 8/125 · 8.7/125 · 9/125 · 10/125um</p> <p><b>ERPS Ethernet Ring Protection</b></p> <ul style="list-style-type: none"> <li>• Support G.8032 (ERPS), support 255 loops at most, and supports 1024 devices per ring.</li> <li>• The self-healing time of the ring network is less than 12ms</li> </ul> <p><b>Software Function</b></p> <ul style="list-style-type: none"> <li>• <b>Basic function:</b><br/>Support hardware watchdog, factory reset, system and port LED<br/>Support global information, statistical information, log information<br/>Support User management, alarm management, configuration management<br/>Support Port rate, duplex, flow control, maximum frame length configuration<br/>Support Port mirroring, port speed limit, port energy saving</li> <li>• <b>Layer 3 Interface:</b><br/>Support Layer 3 interface<br/>Support IPv4, IPv6 address configuration<br/>Support ARP configuration<br/>Support ND configuration</li> <li>• <b>Layer 3 Routing:</b><br/>Support IPv4 static routing<br/>Support IPv6 static routing<br/>Support RIP V1/V2<br/>Support OSPF</li> <li>• <b>DHCP:</b><br/>Support DHCP server<br/>Support DHCP relay<br/>Support DHCP Snooping</li> <li>• <b>VLAN:</b><br/>Support 4K VLAN<br/>Support 802.1Q VLAN · based on port VLAN<br/>Support Access · Trunk · Hybrid VLAN mode<br/>Support GVRP (VLAN registration protocol)<br/>Support MAC VLAN · IP VLAN<br/>Support Voice VLAN</li> <li>• <b>MAC Address:</b><br/>Support MAC address automatic learning and aging<br/>Support Static, dynamic, filtered address table</li> </ul> |

\* Specification will be changed without prior notice



| Model   | AirLive L3-XGS4804   |
|---|--|
| <ul style="list-style-type: none"> <li>• <b>Security features:</b> <ul style="list-style-type: none"> <li>Password protection</li> <li>Support Restrict user access based on port number, IP address, MAC address</li> <li>Support HTTPS、SSH V1/V2</li> <li>Support VLAN-IP-MAC-PORT binding</li> <li>Support ARP detection, IP source protection, DoS protection</li> <li>Support DHCP Snooping、DHCP Attack protection</li> <li>Support 802.1X Certification</li> <li>Support AAA (Authentication, Authorization, Accounting), Support RADIUS protocol</li> <li>Support Port security, port isolation</li> </ul> </li> <li>• <b>Access control:</b> <ul style="list-style-type: none"> <li>Support L2(Layer 2)~L4(Layer 4) Packet filtering function</li> <li>Support Port mirroring, flow rate limiting, QoS remarking</li> </ul> </li> <li>• <b>QoS:</b> <ul style="list-style-type: none"> <li>Support 8 port queues</li> <li>Support Port priority, 802.1P priority, DSCP priority</li> <li>Support SP, WRR Priority scheduling algorithm</li> </ul> </li> <li>• <b>Spanning tree:</b> <ul style="list-style-type: none"> <li>Support STP(IEEE 802.1d), RSTP(IEEE 802.1w) and MSTP(IEEE 802.1s) protocol</li> <li>Support Multi-instance, Support Aggregate interface</li> <li>Support BPDU protection</li> </ul> </li> <li>• <b>Multicast:</b> <ul style="list-style-type: none"> <li>Support IGMP v1/v2/v3 Snooping</li> <li>Support MLD v1/v2 Snooping</li> <li>Support Layer 2 multicast fast leave mechanism, querier</li> <li>Support Layer 2 IPv4 static multicast</li> <li>Support Layer 2 IPv6 static multicast</li> <li>Support IGMP v1/v2/v3 Layer 3 multicast</li> </ul> </li> <li>• <b>Storm Suppression:</b> <ul style="list-style-type: none"> <li>Support multicast suppression</li> <li>Support broadcast storm suppression</li> <li>Support unknown unicast suppression</li> </ul> </li> <li>• <b>Ring protection</b> <ul style="list-style-type: none"> <li>Support Ring protection</li> </ul> </li> <li>• <b>Link Aggregation</b> <ul style="list-style-type: none"> <li>Support Static Aggregation</li> <li>Support LACP Dynamic Aggregation</li> <li>Support based on IP, MAC, mixed load-balancing modes</li> <li>Maximum support 8 aggregation groups (8 ports per aggregation group)</li> </ul> </li> <li>• <b>IPv6</b> <ul style="list-style-type: none"> <li>Support IPv6 Ping、IPv6 Traceroute、IPv6 Telnet</li> <li>Support IPv6 SSH</li> <li>Support IPv6 HTTP、IPv6 HTTPS</li> </ul> </li> </ul> | <p><b>Management and Maintenance</b></p> <ul style="list-style-type: none"> <li>Support WEB Management (HTTP、HTTPS)</li> <li>Support CLI (Telnet, SSH V1/V2, Local serial port)</li> <li>Support SNMP V1/V2/V3</li> <li>Support RMON V2</li> <li>Support LLDP Device discovery</li> <li>Support SNTP Time synchronization</li> <li>Support CPU Monitoring, Memory Monitoring</li> <li>Support System log, classification warning</li> <li>Support Ping, Traceroute detection, cable detection</li> </ul> <p><b>Environment</b></p> <ul style="list-style-type: none"> <li>• <b>Operating Temperature:</b> -10°C to +50°C</li> <li>• <b>Storage Temperature:</b> -40°C to +70°C</li> <li>• <b>Working Humidity:</b> 10%~90%, non-condensing</li> <li>• <b>Storage Humidity:</b> 5%~90%, non-condensing</li> </ul> <p><b>Standard package of switch</b></p> <ul style="list-style-type: none"> <li>• <b>Product size:</b> 44x28x4.4 cm</li> <li>• <b>Package Dimensions:</b> 50x36.5x8.5 cm</li> <li>• <b>Package Weight:</b> N.W: 3.87KG/ G.W: 4.7KG</li> <li>• <b>Package content:</b> Switch x 1, QIG x 1, Power cord x 1, Serial cable x 1, Rack ear x 1</li> </ul> <p><b>Standard carton package</b></p> <ul style="list-style-type: none"> <li>Carton Dimensions: 52x44.5x38.5 cm</li> <li>Packing QTY: 5 PCS</li> <li>Packing weight: 24.6 KGS</li> </ul> <p><b>Ordering Information</b></p> <ul style="list-style-type: none"> <li>• <b>Model:</b><br/>L3-XGS4804</li> <li>• <b>Name:</b><br/>L3 Managed Gigabit switch, 48-Port including 4x 10G SFP+ Fiber ports.</li> </ul> |

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