

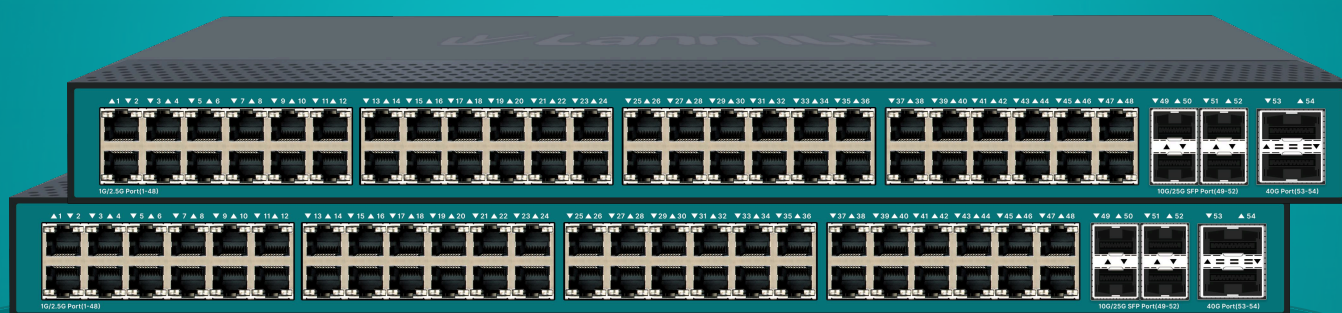


## LM-S6054-48MG4X2Q

DATASHEET

# 2.5G 48 port L3 Managed Ethernet Switch with 2 x 40G QSFP uplink

The LM-S6054-48MG4X2Q is a high-performance Layer 3 core routing switch designed to meet the high-density and high-bandwidth needs of next-generation enterprise networks, data centers, and metropolitan area networks. It also serves the requirements of telecom network operators and can be used in the aggregation or access layers of campus Ethernet networks.



# PRODUCT INTRODUCTION

## Product Overview

The LM-S6054-48MG4X2Q is a next-generation Layer 3 managed Ethernet switch engineered for high-density, high-performance network environments that demand reliability, scalability, and advanced intelligence.

Designed to meet the evolving needs of enterprise core networks, data centers, metropolitan area networks (MANs), and telecom infrastructures, this switch delivers carrier-grade performance with flexible deployment options across core, aggregation, and access layers.

Built on a robust hardware platform and powered by a Linux-based dual-stack (IPv4/IPv6) operating system, the LM-S6054-48MG4X2Q ensures seamless integration, efficient routing, and optimized data forwarding for large-scale, mission-critical networks.

With 48 multi-speed 100/1000M/2.5G Base-T RJ45 ports, 4 high-speed 10G/25G SFP+ uplinks, and 2 40G QSFP ports, the switch offers exceptional port density and flexible high-bandwidth uplink connectivity to meet the demands of modern traffic loads and cloud-driven applications.

Featuring a Virtual Switch Framework (VSF), the LM-S6054-48MG4X2Q allows multiple switches to operate as a single logical unit, simplifying management and scaling network capacity without increasing complexity. This capability enables unified configuration, monitoring, and upgrading, ensuring operational efficiency and reduced downtime during maintenance or expansion.

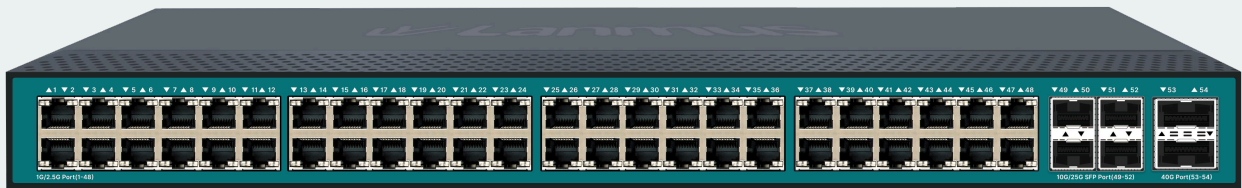
The switch integrates a comprehensive suite of Layer 2 and Layer 3 features, including VLAN segmentation, OAM/APS link protection, advanced QoS, ACL security control, and hardware-based NetFlow traffic analysis, providing precise network visibility and control.

## Product Overview

Enhanced redundancy protocols such as STP/RSTP/MSTP and LACP ensure network resilience, while RADIUS and TACACS+ authentication, port isolation, and ARP spoofing protection safeguard against unauthorized access and data breaches.

With a switching capacity of 600 Gbps and a packet forwarding rate of 446.43 Mpps, the LM-S6054-48MG4X2Q is optimized for low-latency, high-throughput data transmission. Intelligent fan control and efficient power design ( $\leq 125W$  full load) contribute to long-term stability and energy savings.

## DEVICE BRIEF INFORMATION



## LM-S6054-48MG4X2Q

- 48 \* 100/1000M/2.5G Base-T RJ45 port
- 4 \* 10G/25G SFP+
- 2 \* 40G QSFP
- 440X330X44mm (W \* D \* H)
- AC input: 100~240V,47/63 Hz

# Key Features

## Carrier-level equipment stability

- Based on Linux operating system, support IPv4/IPv6 dual protocol stack platform
- Support multiple link redundancy and network redundancy protocols such as STP/RSTP/MSTP/LACP

## Perfect safety mechanism

- Support link protection functions FlexLink, LACP
- Support remote loop detection function
- Support remote user authentication based on TACACS+, RADIUS, and Local user authentication

## Powerful QoS capabilities

- Support port speed and flow speed limit function
- Support classification based on service flow and QoS flow control function
- Support queue scheduling algorithms such as SP/WRR/SP+WRR
- Support port-based and service flow-based mirroring functions

## Rich management protocols

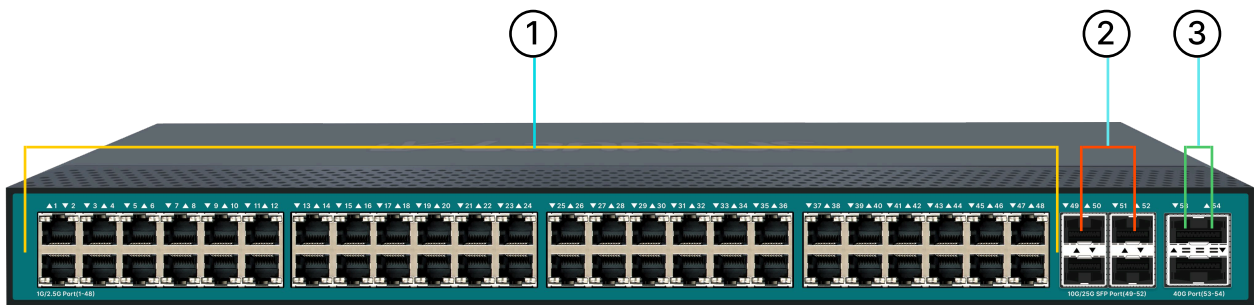
- Support easy-to-use network management function
- Support CLI based on RS232 serial port, Telnet and SSHv2
- Support web-based configure operation management, support SNMP v1/v2/v3
- Support remote upgrade or equipment through FTP and TFTP



# Hardware Specifications

| Attributes              | LM-S6054-48MG4X2Q                                                                                               |
|-------------------------|-----------------------------------------------------------------------------------------------------------------|
| Ethernet Port           | 48 * 10/100/1000M/2.5G Base-T<br>4 * 10G/25G SFP+<br>2 * 40G QSFP                                               |
| Management Port         | 1x Console, 1x Mgmt port                                                                                        |
| Exchange Capacity       | 600Gbps                                                                                                         |
| Packet Forwarding Rate  | 446.43Mpps                                                                                                      |
| MAC Address             | 32K                                                                                                             |
| Packet Buffer           | 72Mbit                                                                                                          |
| ACL Table               | 11.5K (8 Slices)                                                                                                |
| Routing Table           | 64K/16K<br>(IPv4/IPv6)                                                                                          |
| Memory and Storage      | Memory: 1GB; Flash: 8GB                                                                                         |
| Power                   | AC: 100 ~ 240V; 47/63 Hz                                                                                        |
| Power Consumption       | Full load ≤125W                                                                                                 |
| Cooling System          | 4 * smart speed fan (Fixed)                                                                                     |
| Dimensions              | 440 X 330 X 44mm (W * D * H)                                                                                    |
| Environment Temperature | Working Temperature: -10°C~50°C<br>Storage temperature: -40°C~70°C<br>Relative Humidity: 5%~95%, non-condensing |

# Panel view



- ① 10/100/100M/2.5G Base-T
- ② 10G/25G SFP+
- ③ 40G QSFP

# LED Indicator

| LEDs/ Buttons             | Colors | Function                   | Description |                                                                                      |
|---------------------------|--------|----------------------------|-------------|--------------------------------------------------------------------------------------|
| PWR1(left)<br>PWR2(right) | Green  | Power Status               | ON          | The AC/DC power module is normal.                                                    |
|                           |        |                            | OFF         | The AC/DC power module faulty or unavailable                                         |
| ETH                       | Green  | Port status                | ON          | MTMG port LinkUP.                                                                    |
|                           |        |                            | OFF         | The MTMG port is not connected.                                                      |
| SYS                       | Green  | System running status      | Green OFF   | The device is not running or power off                                               |
|                           |        |                            | Green Flash | The device is running normally.                                                      |
| USB                       | Green  | Usb flash insertion status | ON/ FLASH   | The link is properly connected (link up) and in action Works in 2.5G/10Gigabit mode. |
|                           |        |                            | OFF         | The link is interrupted (link down).                                                 |

## Plug-in Units



### Power Supply Unit (PSU)

The device has a built-in power module, and the power port is located at the rear of the device. The below shows the electrical characteristics of the switch :

| Characteristic | Power Supply          |
|----------------|-----------------------|
| AC             | AC: 100~240V, 47~63Hz |

## FAN Unit

The fans of the device operate according to the power of the device environment. The chassis has four built-in fans for heat dissipation.

| Characteristic    | FAN     |
|-------------------|---------|
| LM-S6054-48MG4X2Q | 4 * FAN |

## Software Specifications

| Characteristic | LM-S6054-48MG4X2Q                                                                                                |
|----------------|------------------------------------------------------------------------------------------------------------------|
| VLAN           | Support 4K VLAN<br>Support VLAN based on port, MAC and protocol<br>Support dual Tag VLAN,<br>Access/Trunk/Hybrid |

# Software Specifications

| Characteristic   | LM-S6054-48MG4X2Q                                                                                                                                                                                                     |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ethernet         | Ethernet interface operating modes<br>Ethernet interface operating rates<br>Jumbo Frame<br>Port enable/disable<br>Port based storm-control<br>Unknow-unicast/unknow-multicast/broadcast storm-control<br>Port-isolate |
| MAC              | Support static MAC address setting<br>Support blackhole MAC address filtering<br>Support port MAC address limit<br>Automatic learning and aging of MAC addresses                                                      |
| ARP              | Static and dynamic ARP entries<br>Aging of ARP entries<br>ARP-Proxy                                                                                                                                                   |
| Port Control     | Support two-way bandwidth control<br>Support port storm suppression<br>Support 9K Jumbo ultra-long frame forwarding                                                                                                   |
| Port Aggregation | Support static link aggregation<br>Support dynamic LACP<br>Each aggregation group supports a maximum of 8 ports<br>LAG load balance (SIP/DIP/SMAC/DMAC)                                                               |
| Mirroring        | Supports multi-port mirroring analysis<br>Service flow-based image analysis                                                                                                                                           |
| ACL              | Support standard and extended ACL<br>Support ACL policy based on time period<br>Provide MAC, IP, L4 port and port level security control functions                                                                    |
| Safety           | Support RADIUS & TACACS+ authentication<br>Support port isolation<br>Support broadcast message rate suppression<br>Support IP Source Guard<br>Support ARP flood suppression and ARP spoofing protection               |

# Software Specifications

| Characteristic     | LM-S6054-48MG4X2Q                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| QoS                | <p>Traffic classification based on COS/DSCP (simple classification)</p> <p>Traffic classification based on ACL (complex classification)</p> <p>Traffic classification based on inner header of the tunnel packets</p> <p>Queue scheduling</p> <p>Remark the priority fields (COS/DSCP) of the packet based on ACL</p> <p>Traffic policing based on direction(in/out) of Port</p> <p>Traffic policing based on direction(in/out) of VLAN</p> <p>Traffic policing based on direction(in/out) of flow</p> <p>Traffic policing based on direction(in/out) of aggregated flow</p> <p>SP (Strict Priority) scheduling</p> <p>WRR (Weighted Round Robin) scheduling</p> <p>SP + WRR mixed scheduling</p> |
| Layer 3            | <p>Support ARP learning and aging</p> <p>Support IPv4static route</p> <p>Support dynamic route RIP/OSPF</p> <p>Support IPv4/IPv6 dual-stack platform</p> <p>Support CLI、Telnet、WEB、SNMP V1/V2/V3、SSHv2 mode</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Terminal Services  | <p>Configurations through CLI</p> <p>Console Terminal service</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Spanning-Tree      | <p>Rapid Spanning-Tree Protocol</p> <p>Multi-instance Spanning-Tree Protocol</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Network Management | <p>DHCP Server</p> <p>DHCP Relay</p> <p>SNTP (Simple Network Time Protocol)</p> <p>LLDP</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Maintenance        | <p>Per-module Debug features</p> <p>CPU usage display and alarm</p> <p>Memory usage display and alarm</p> <p>User operation logs</p> <p>Management of logs, alarms, and debugging information</p> <p>Manual reboot</p> <p>Reboot Information logging Ping</p> <p>IPv6 Ping</p> <p>Traceroute</p> <p>To CPU/From CPU packets statistics</p> <p>Time configuration</p> <p>Timezone</p>                                                                                                                                                                                                                                                                                                              |

## Software Specifications

| Characteristic           | LM-S6054-48MG4X2Q                                                                                                                                                                                                                                                                                                                        |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System Security          | SSHv1/v2<br>RADIUS<br>TACACS+<br>MAC/IP ACL<br>Port/VLAN/L4-Port ACL<br>IP Source Guard<br>Limitation on MAC address learning on interface<br>Rate limit<br>CPU Traffic Limit<br>CLI/WEB/SNMP/Telnet/SSH filtering                                                                                                                       |
| Configuration Management | Inband management interface and configuration<br>Outband management interface and configuration<br>Privileged user priority and privileged commands<br>Network management based on SNMP v1/v2<br>Public and private MIB<br>Public and private Trap<br>Configuration and management based on WEB<br>Restore factory default configuration |
| File system              | Upload and download files through FTP or TFTP                                                                                                                                                                                                                                                                                            |
| System Management        | Support FTP, TFTP file upload and download<br>Support SNMP<br>Support LLDP neighbor device discovery protocol<br>Support Ping and Traceroute<br>Supports configuration management based on WEB pages                                                                                                                                     |
| Upgrade                  | Upgrade with the local image file<br>Upgrade with the remote TFTP server<br>Online upgrade Uboot                                                                                                                                                                                                                                         |

## Connector Specifications

| Index | SFP/SFP+ Module Description                                                                                                                                                                                                  |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1     | <ul style="list-style-type: none"><li>- Wavelength: 850 nm / Distance: 550 m / Mode: multi-mode</li><li>- Connector: LC / Data rate: 1.25Gbit/s / Core type: Dual Core</li><li>- Operating Temperature: 0°C - 70°C</li></ul> |



# Connector Specifications

| Index | SFP/SFP+ Module Description                                                                                                                                                                                                                                                  |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1     | <ul style="list-style-type: none"><li>- Wavelength: 850 nm / Distance: 550 m / Mode: multi-mode</li><li>- Connector: LC / Data rate: 1.25Gbit/s / Core type: Dual Core</li><li>- Operating Temperature: 0°C - 70°C</li></ul>                                                 |
| 2     | <ul style="list-style-type: none"><li>- Wavelength: 1310nm / Distance: 5km / Mode: single-mode</li><li>- Connector: LC / Data rate: 1.25Gbit/s / Core type: Dual Core</li><li>- Operating Temperature: 0°C – 70°C</li></ul>                                                  |
| 3     | <ul style="list-style-type: none"><li>- Wavelength: 1310 nm / Distance: 10 km / Mode: single-mode</li><li>- Connector: LC / Data rate: 1.25 Gbit/s / Core type: Dual Core</li><li>- Operating Temperature: 0°C – 70°C</li></ul>                                              |
| 4     | <ul style="list-style-type: none"><li>- Wavelength: 1310 nm / Distance: 15 km / Mode: single-mode</li><li>- Connector: LC / Data rate: 1.25 Gbit/s / Core type: Dual Core</li><li>- Operating Temperature: 0°C – 70°C</li></ul>                                              |
| 5     | <ul style="list-style-type: none"><li>- Wavelength: 1310 nm / Distance: 20 km / Mode: single-mode</li><li>- Connector: LC / Data rate: 1.25 Gbit/s / Core type: Dual Core</li><li>- Operating Temperature: 0°C - 70°C</li></ul>                                              |
| 6     | <ul style="list-style-type: none"><li>- Wavelength: 1310 nm / Distance: 40 km / Mode: single-mode</li><li>- Connector: LC / Data rate: 1.25 Gbit/s / Core type: Dual Core</li><li>- Operating Temperature: 0°C - 70°C</li></ul>                                              |
| 7     | <ul style="list-style-type: none"><li>- Wavelength: 850nm / Distance: 300m / Mode: Multimode</li><li>- Connector: LC / Data rate: 10.3125 Gbit/s / Core type: Dual Core</li><li>- Operating Temperature: 0°C ~ 70°C</li><li>- 10G BASE-SR (10G)</li></ul>                    |
| 8     | <ul style="list-style-type: none"><li>- Wavelength: 850nm / Distance: 300m / Mode: Multimode</li><li>- Connector: LC / Data rate: 10.3125 Gbit/s / Core type: Dual Core</li><li>- Operating Temperature: 0°C ~ 70°C</li><li>- 1000 BASE-SX (1G), 10G BASE-SR (10G)</li></ul> |
| 9     | <ul style="list-style-type: none"><li>- Wavelength: 1310nm / Distance: 10Km / Mode: Single mode</li><li>- Connector: LC / Data rate: 10.3125 Gbit/s / Core type: Dual Core</li><li>- Operating Temperature: 0°C ~ 70°C</li><li>- 10G BASE-LR (10G)</li></ul>                 |
| 10    | <ul style="list-style-type: none"><li>- Wavelength: 1550nm / Distance: 40Km / Mode: Single mode</li><li>- Contnector: LC / Data rate: 10.3125 Gbit/s / Core type: Dual Core</li><li>- Operating Temperature: 0°C ~ 70°C</li><li>- 10G BASE-ER (10G)</li></ul>                |

# Connector Specifications

| Index | SFP/SFP+ Module Description                                                                                                                                                                                                                                  |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11    | <ul style="list-style-type: none"><li>- Wavelength: 1310nm / Distance: 70Km / Mode: Single mode</li><li>- Connector: LC / Data rate: 10.3125 Gbit/s / Core type: Dual Core</li><li>- Operating Temperature: 0°C ~ 70°C</li><li>- 10G BASE-ZR (10G)</li></ul> |

# Purchase Info

| Product Name      | Product Description                                                                     |
|-------------------|-----------------------------------------------------------------------------------------|
| LM-S6054-48MG4X2Q | <p>48 * 100/1000M/2.5G Base-T RJ45 port</p> <p>4 * 10G/25G SFP+</p> <p>2 * 40G QSFP</p> |



# Xtreme Switch

DATA SHEET | LM-S6054-48MG4X2Q



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