MokerLink 4x10G + 4x10G SFP Managed

MokerLink 8-Port 10G Managed Ethernet Switch User Manual

Model: 4x10G + 4x10G SFP Managed

1. Introduction

This manual provides detailed instructions for the installation, operation, and management of your MokerLink 8-Port 10G Managed Ethernet Switch. This device is designed to enhance network performance and efficiency with its high-speed connectivity and advanced management features. Please read this manual thoroughly before using the product to ensure proper setup and functionality.

2. Product Overview

The MokerLink 8-Port 10G Managed Ethernet Switch features a robust design for high-bandwidth network environments. It includes 4x10Gbps Ethernet RJ45 ports and 4x10Gbps SFP+ slots, offering versatile connectivity options for various network devices. The switch supports a 160Gbps switching capacity and a packet forwarding rate of 119.04Mpps, ensuring non-blocking 10G line speed forwarding across all ports.
Key features include:

- **High-Speed Ports:** 4x10Gbps RJ45 ports (auto-adaptive 10G/5G/2.5G/1000M/100M) and 4x10Gbps SFP+ slots (compatible with 1G/10G optical modules).
- **High Bandwidth:** 160Gbps switching capacity and 119.04Mpps packet forwarding rate.
- **L3 Management:** Supports Web and Command Line Interface (CLI) for comprehensive device and port configuration, including IPv4/IPv6 management and routing.
- **Advanced Layer 2 Features:** VLAN, ACL, QoS, Jumbo frame, DHCP, security, multicast, MAC address table, diagnosis, Statistics, MSTP/RSTP/STP.
- **Security & Diagnosis:** AAA/802.1X/MAC-Based authentication, DoS anti-attack, dynamic ARP inspection, DHCP Snooping, IP Source Guard, Port Security, Protected Ports, storm control, Console/RAM/Flash Logs, Port Mirroring, Ping, Traceroute, Port Tests, UDLD Protocol.
- **Durable Design:** Metal case with industrial-grade fan for efficient heat dissipation, suitable for desktop or wall-mounting.

Figure 2.1: MokerLink 8-Port 10G Managed Ethernet Switch highlighting key features like 10G ports, SFP+ slots, Web/CLI management, L3 features, rack/wall mount, and energy saving.

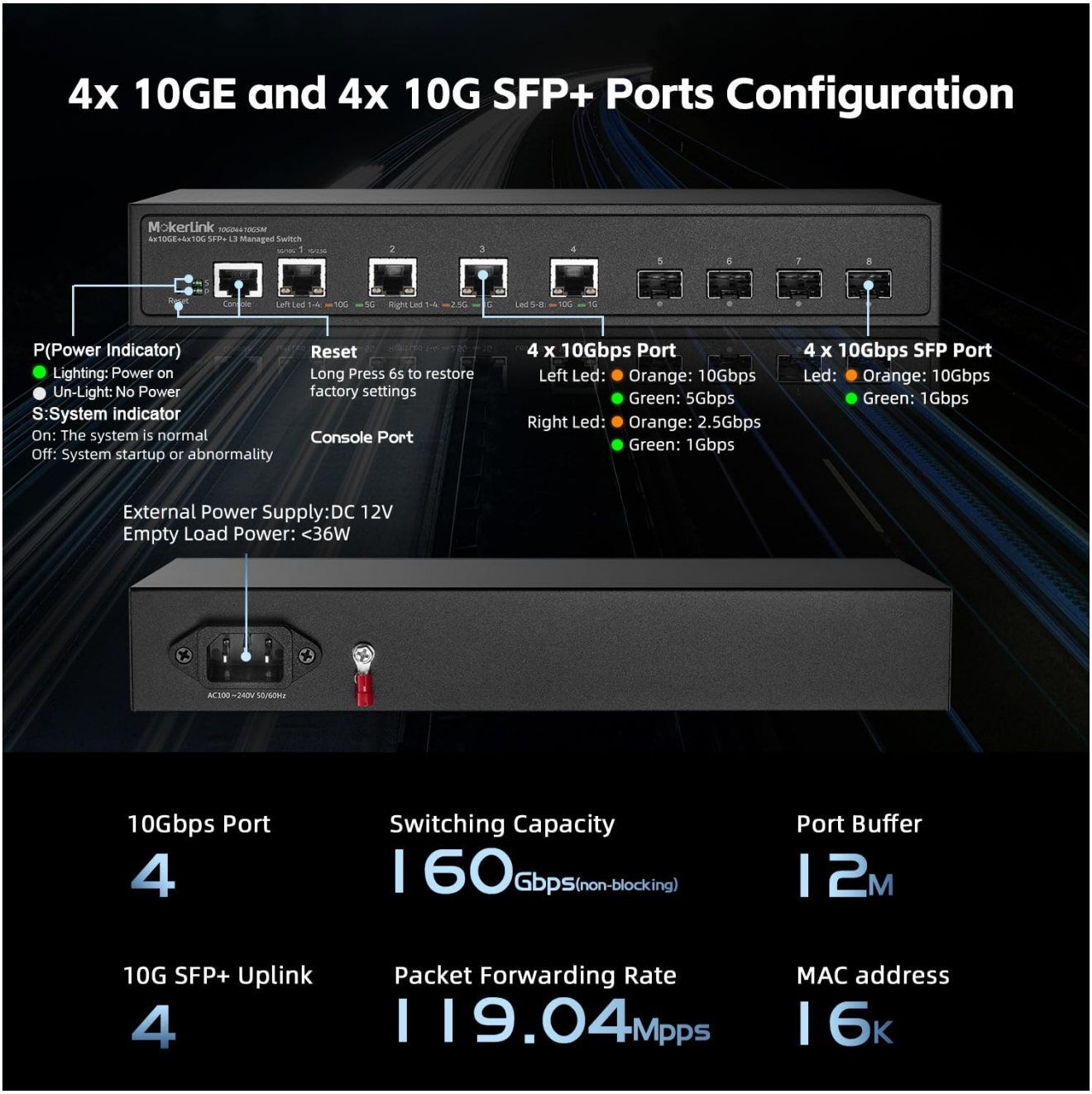

Figure 2.2: Front and rear panel view of the switch, showing 4x10Gbps RJ45 ports, 4x10Gbps SFP+ slots, console port, reset button, power indicator, system indicator, and external power supply input.

3. Package Contents

Verify the contents of your package upon opening. If any items are missing or damaged, please contact your vendor.

- 1 x MokerLink 10G Managed Switch
- 1 x Power Adapter
- 1 x User Manual (this document)
- Mounting Accessories (for desktop or wall-mount installation)

4. Setup

4.1 Physical Installation

The MokerLink 8-Port 10G Managed Ethernet Switch is designed for flexible deployment, supporting both desktop and wall-mount installations.

- **Desktop Placement:** Place the switch on a flat, stable surface, ensuring adequate ventilation around the device.
- **Wall-Mounting:** Use the provided mounting accessories to securely attach the switch to a wall. Ensure the mounting location is sturdy and allows for proper cable management and ventilation.

4.2 Connecting Network Devices

Connect your network devices (e.g., servers, workstations, NAS, WiFi 6/7 APs) to the switch's RJ45 or SFP+ ports.

- **RJ45 Ports:** Use appropriate Ethernet cables for optimal performance. For 10Gbps connections, Cat6a or Cat7 cables are recommended. For 2.5Gbps/5Gbps, Cat5e or Cat6 cables are suitable.
- **SFP+ Slots:** Insert compatible 1G or 10G SFP/SFP+ optical modules into the slots, then connect fiber optic cables to the modules.

Figure 4.1: The switch connected to various high-performance devices such as WiFi 6/7 AP, servers, workstations, NAS, and 4K/8K video systems, illustrating cable type recommendations for different speeds.

4.3 Powering On

Connect the provided power adapter to the switch's power input and then to a power outlet. The Power LED (P) on the front panel should illuminate, indicating the switch is receiving power. The System LED (S) will blink during startup and remain steady when the system is operational.

5. Operating Instructions

5.1 LED Indicators

The front panel LEDs provide status information:

- **P (Power Indicator):**
  - On: Power is supplied.
  - Off: No power.
- **S (System Indicator):**
  - On: The system is normal.
  - Off: System startup or abnormality.
- **RJ45 Port LEDs (Left/Right):**
  - Left LED (Link/Activity): Orange for 10Gbps, Green for 5Gbps, 2.5Gbps, 1Gbps, or 100Mbps. Blinks for activity.
  - Right LED (Speed): Orange for 10Gbps, Green for 1Gbps.
- **SFP+ Port LEDs:**
  - Led: Orange for 10Gbps, Green for 1Gbps. Blinks for activity.

5.2 Initial Access to Management Interface

The switch can be managed via a Web-based interface or Command Line Interface (CLI).

- **Web Interface:** Access the switch by entering its default IP address (typically 192.168.2.1) into a web browser. The default username is 'admin' and the default password is 'admin'.
- **CLI:** Connect to the console port using a console cable and a terminal emulator, or use Telnet/SSH for remote access.

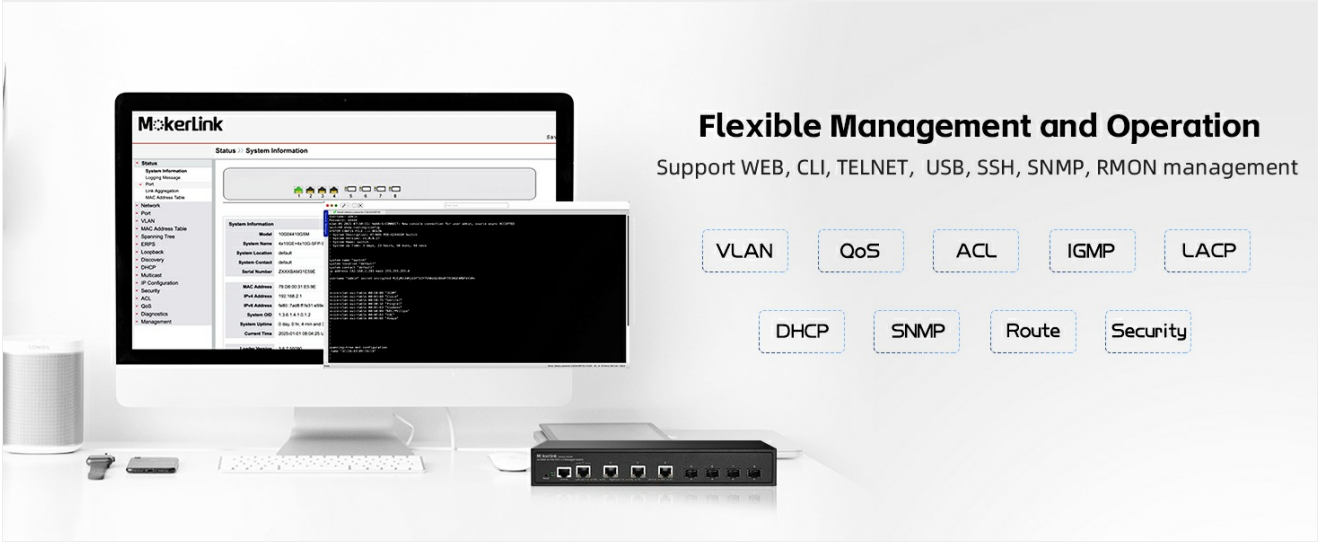

Figure 5.1: Illustration of accessing the switch's management interfaces, including the web interface and command line interface, with default login credentials.

6. Management Features

The MokerLink 8-Port 10G Managed Ethernet Switch offers a comprehensive suite of Layer 2 and Layer 3 management features.

6.1 Layer 2 Switching Features

- **VLAN (Virtual Local Area Network):** Supports 802.1Q Tag-based VLANs to segment networks and improve security and performance.
- **Link Aggregation (LACP):** Combines multiple physical links into a single logical link to increase bandwidth and provide link redundancy.
- **QoS (Quality of Service):** Prioritizes network traffic to ensure critical applications receive sufficient bandwidth and low latency.
- **MSTP/RSTP/STP:** Spanning Tree Protocols prevent network loops.
- **Jumbo Frames:** Supports larger Ethernet frames for increased data throughput.

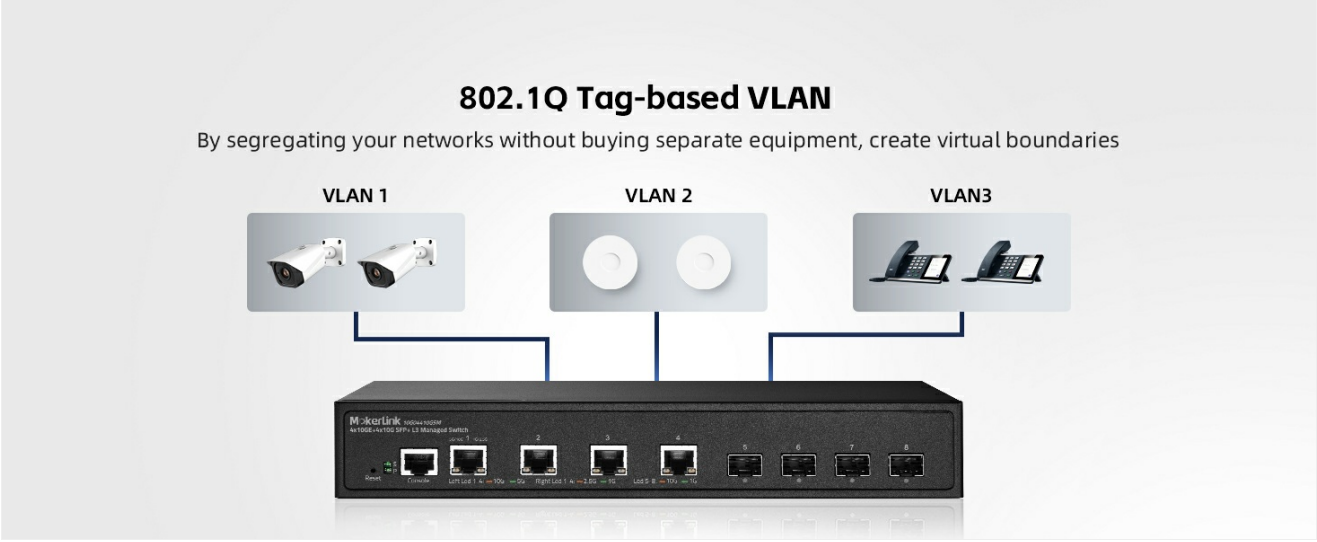

Figure 6.1: Example of 802.1Q Tag-based VLANs segregating network traffic for different devices like cameras, servers, and IP phones.

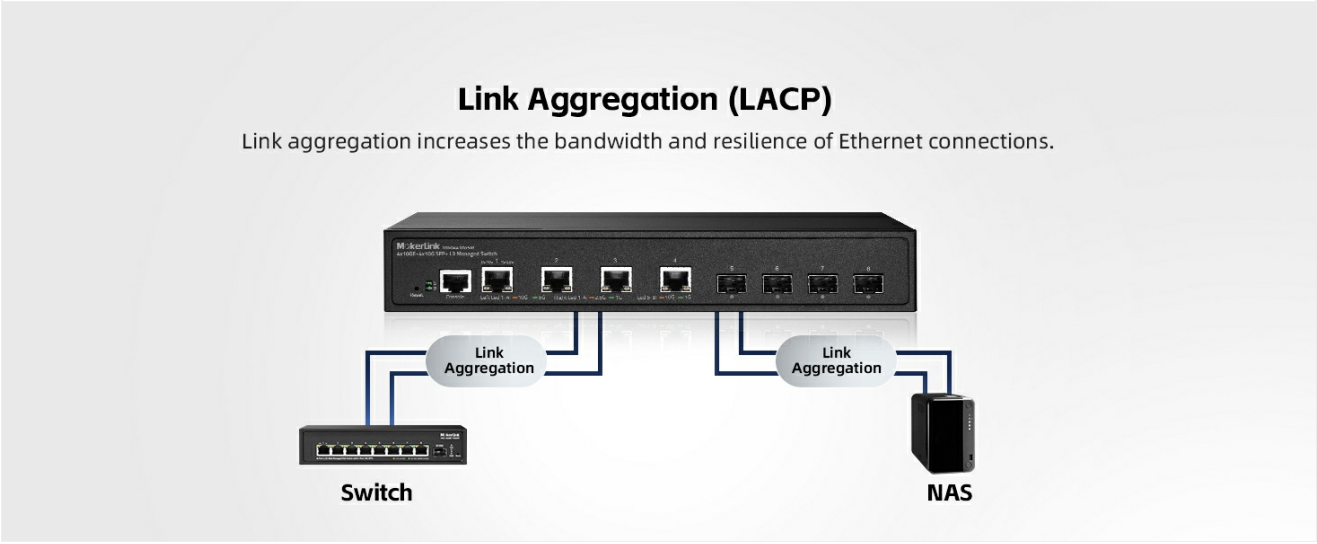

Figure 6.2: Illustration of Link Aggregation (LACP) connecting the switch to another switch and a NAS for enhanced bandwidth and

resilience.

Figure 6.3: QoS mechanism prioritizing audio, video, and data traffic to reduce packet loss and latency.

6.2 Layer 3 Routing Features

- **IPv4/IPv6 Management:** Supports both IPv4 and IPv6 protocols for network addressing and routing.
- **Static Routes:** Configurable static routes for directing traffic between different IP networks.
- **ARP (Address Resolution Protocol):** Manages the mapping of IP addresses to MAC addresses.
- **Loopback Interface:** A virtual interface used for management and routing protocols.

6.3 Security and Diagnosis

- **AAA/802.1X/MAC-Based Authentication:** Provides robust user and device authentication.
- **DoS Anti-Attack:** Protects against Denial of Service attacks.
- **DHCP Snooping & IP Source Guard:** Prevents unauthorized DHCP servers and IP spoofing.
- **Port Security:** Limits the number of MAC addresses on a port to prevent unauthorized access.
- **Storm Control:** Prevents network performance degradation due to excessive broadcast, multicast, or unknown unicast traffic.
- **Port Mirroring:** Duplicates network traffic from one port to another for monitoring and analysis.
- **Ping, Traceroute, Port Tests:** Diagnostic tools for network connectivity and performance.
- **UDLD Protocol:** Unidirectional Link Detection protocol to detect and disable unidirectional links.
- **Loop Detection:** Identifies and removes network loops to prevent traffic disruptions.

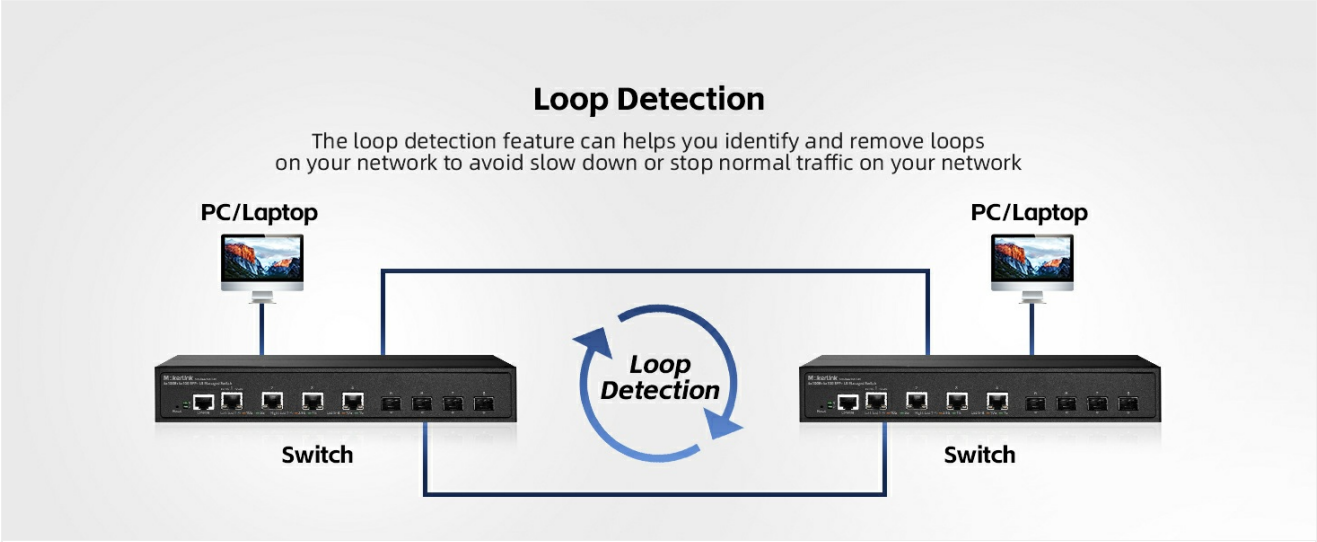

Figure 6.4: Loop detection feature identifying and preventing network loops between two switches, ensuring stable network operation.

7. Maintenance

Regular maintenance ensures the longevity and optimal performance of your switch.

- **Firmware Upgrade:** Periodically check the MokerLink official website for firmware updates to enhance features and improve security. Follow the provided instructions for a safe upgrade process.
- **Configuration Backup/Restore:** Regularly back up your switch configuration to prevent data loss. This allows for quick restoration in case of misconfiguration or device replacement.
- **Environmental Conditions:** Ensure the switch operates within recommended temperature and humidity ranges. Maintain clear airflow around the device to facilitate heat dissipation by the industrial-grade fan.
- **Cleaning:** Keep the switch clean and free from dust. Use a soft, dry cloth for cleaning.

8. Troubleshooting

This section addresses common issues you might encounter.

8.1 No Power

- Ensure the power adapter is securely connected to the switch and a working power outlet.
- Verify the power outlet is functional by plugging in another device.
- Check the power adapter for any visible damage.

8.2 No Link on a Port

- Check the Ethernet or fiber cable connection at both ends. Ensure cables are not damaged.
- Verify that the connected device is powered on and functioning correctly.
- Ensure the correct cable type is used for the speed (e.g., Cat6a/7 for 10G RJ45).
- Check the port status in the switch's management interface.
- Try connecting to a different port on the switch or using a different cable.

8.3 Unable to Access Web Interface

- Ensure your computer's IP address is in the same subnet as the switch's default IP (192.168.2.x, with subnet

mask 255.255.255.0).

- Verify the switch's IP address has not been changed from the default (192.168.2.1).
- Clear your browser's cache or try a different browser.
- Temporarily disable any firewall or antivirus software on your computer.

8.4 Resetting to Factory Settings

If you forget the password or encounter persistent issues, you can restore the switch to its factory default settings.

- With the switch powered on, locate the**Reset** button on the front panel.
- Use a paperclip or a similar pointed object to press and hold the Reset button for approximately 6 seconds.
- Release the button. The switch will reboot with factory default settings.

9. Specifications

Feature	Description
Brand	MokerLink
Model Number	4x10G + 4x10G SFP Managed
Number of Ports	9 (4x10Gbps RJ45, 4x10Gbps SFP+, 1xConsole)
Included Components	10G Managed Switch
Color	Black
Compatible Devices	Desktop
Interface	RJ45, SFP+
Data Transfer Rate	160 Gigabits Per Second (Switching Capacity)
Switch Type	Managed (L3)
MAC Address Table Size	16K
Packet Forwarding Rate	119.04 Mpps
Management	Web, CLI, Telnet, SSH, SNMP
Power Consumption	Empty Load Power: <36W

10. Warranty and Support

10.1 Warranty Information

The MokerLink 8-Port 10G Managed Ethernet Switch comes with a**1-Year Limited Warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use. It does not cover damage caused by misuse, accident, unauthorized modification, or external causes.

10.2 Technical Support

For technical assistance, troubleshooting, or warranty claims, please contact MokerLink customer support through the official website or your point of purchase. Please have your product model number and purchase information ready when contacting support.