MokerLink 4x2.5G PoE + 2x10G SFP Managed

MokerLink 4 Port 2.5G PoE Managed Switch with 2 Port 10G SFP+ Slot User Manual

Model: 4x2.5G PoE + 2x10G SFP Managed

1. PRODUCT OVERVIEW

The MokerLink 4 Port 2.5G PoE Managed Switch is designed to provide high-speed network connectivity and Power over Ethernet (PoE) capabilities. It features four 2.5 Gigabit Ethernet ports with PoE support and two 10 Gigabit SFP+ slots for high-bandwidth uplinks. This managed switch offers advanced Layer 2 features for network control and optimization, all within a compact, fanless metal casing.

Figure 1.1: MokerLink 4 Port 2.5G PoE Managed Switch

Figure 1.2: Overview of Switch Features including 2.5Gbps Ports, 10G SFP+ Ports, PoE Support, and L2 Management

Key Features:

- **4 x 2.5 Gigabit Ethernet Ports:** Compliant with IEEE802.3bz (2.5G) standard, supporting 10/100/1000M/2.5G adaptive speeds.
- **2 x 10 Gigabit SFP+ Ports:** Compatible with 1G/2.5G/10G SFP modules (modules not included).
- **Web GUI Managed:** Supports device/port status query and various Layer 2 configurations such as VLAN, LACP, QoS, security, multicast, and MAC address table management.
- **PoE Support:** Ports 1-4 support IEEE802.3af/at PoE, with a maximum of 30W per port and a total power budget of 78W.
- **Fanless Design:** Ensures quiet operation and lower energy consumption.
- **Durable Metal Casing:** Provides robust protection and efficient heat dissipation.
- **Lightning Protection:** Integrated protection to safeguard the device from electrical surges.

2. PACKAGE CONTENTS

Please verify the contents of your package. If any items are missing or damaged, contact your vendor immediately.

- MokerLink 4 Port 2.5G PoE Managed Switch
- Power Adapter
- User Manual (this document)

3. HARDWARE DESCRIPTION

Front Panel

The front panel of the switch includes the Ethernet ports, SFP+ ports, and LED indicators for status monitoring.

Figure 3.1: Front Panel Configuration

- **2.5Gbps PoE Ports (1-4):** RJ45 ports supporting 10/100/1000Mbps and 2.5Gbps speeds, with Power over Ethernet capabilities.
- **10G SFP+ Uplink Ports (5-6):** Slots for 1G/2.5G/10G SFP/SFP+ modules for high-speed fiber or copper connections.
- **Reset Button:** Short press to restart the device. Press and hold for 5 seconds to restore factory default settings.

LED Indicators

Indicator	Status	Description
System	ON	System is working correctly
SFP Indicator	ON	Link connected, normal
PWR (Power)	ON	Device is powered on
PWR (Power)	OFF	Device is powered off
2.5Gbps Port (Left LED)	Orange	2.5Gbps link speed
2.5Gbps Port (Right LED)	Green	10/100/1000Mbps link speed

4. INSTALLATION AND SETUP

4.1 Physical Installation

The switch features a mini size and durable metal casing, allowing for flexible placement options such as desktop use or wall-mounting.

- **Desktop Placement:** Place the switch on a stable, flat surface with adequate ventilation.
- **Wall-Mounting:** Use appropriate screws and anchors (not included) to secure the switch to a wall. Ensure the mounting location is sturdy and allows for proper cable management.

4.2 Power Connection

Connect the provided power adapter to the DC input port on the switch and then plug it into a standard electrical outlet. The PWR LED indicator will illuminate when the switch receives power.

4.3 Network Connections

Connect your network devices to the switch using appropriate cables.

- **2.5G PoE Ports (1-4):** Use Cat5e, Cat6, or Cat6a Ethernet cables to connect devices such as IP cameras, wireless access points, IP phones, or other network devices. These ports will automatically detect and provide PoE power to compatible devices.
- **10G SFP+ Ports (5-6):** Insert compatible 1G, 2.5G, or 10G SFP/SFP+ modules into these slots. Then, connect fiber optic or DAC cables from the modules to your high-speed network devices or other switches.

Figure 4.1: Example Network Connections with 2.5G and 10G Devices

4.4 Initial Web Management Access

To configure the switch, access its web-based management interface:

1. Connect a computer directly to any of the switch's Ethernet ports.

2. Configure your computer's IP address to be in the same subnet as the switch's default IP address (e.g., if the switch is 192.168.2.1, set your computer to 192.168.2.X, where X is not 1, with a subnet mask of 255.255.255.0).

3. Open a web browser and enter the default IP address of the switch:**192.168.2.1**

4. Enter the default login credentials:
   Username: admin
   Password: admin

5. Upon successful login, you will access the switch's web management interface. It is recommended to change the default password for security.

Figure 4.2: Accessing the Web Management Interface

5. OPERATING INSTRUCTIONS (WEB MANAGEMENT)

The web management interface provides comprehensive control over the switch's functions. Below are some of the key Layer 2 features you can configure:

Figure 5.1: Lite L2 Management Features

5.1 VLAN (Virtual Local Area Network)

VLANs allow you to segment your network into smaller, isolated broadcast domains. This enhances security and network performance by controlling traffic flow. The switch supports 802.1Q Tag-based VLANs.
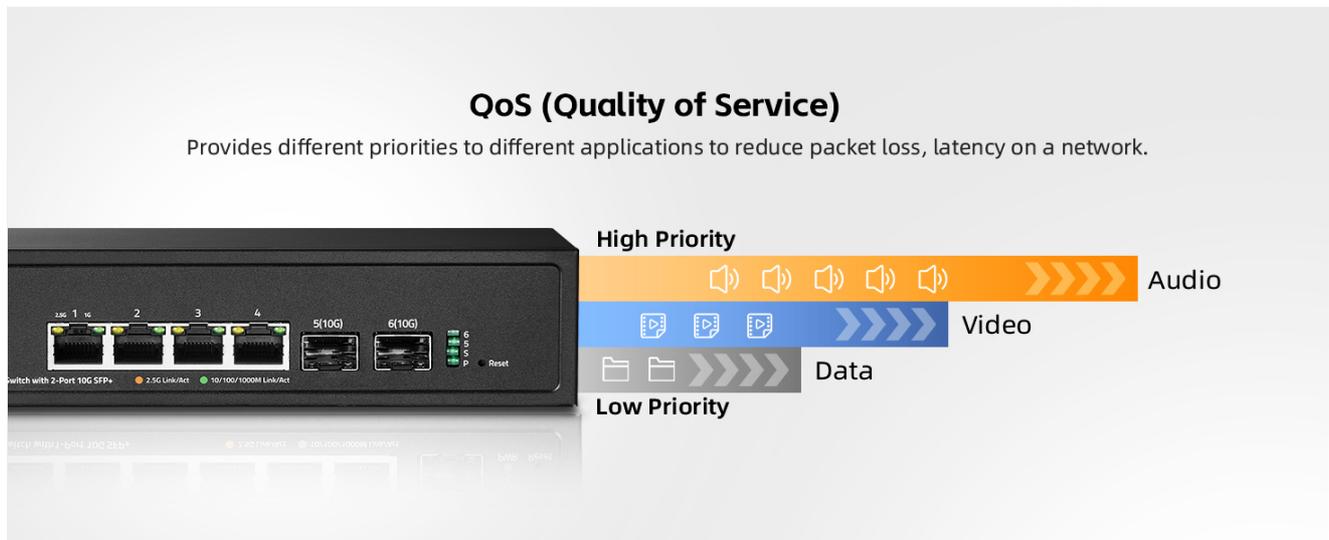

Figure 5.2: 802.1Q Tag-based VLAN Configuration Example

5.2 QoS (Quality of Service)

QoS allows you to prioritize network traffic, ensuring that critical applications (like voice or video) receive sufficient bandwidth and experience minimal delay. This helps reduce packet loss and latency on the network.
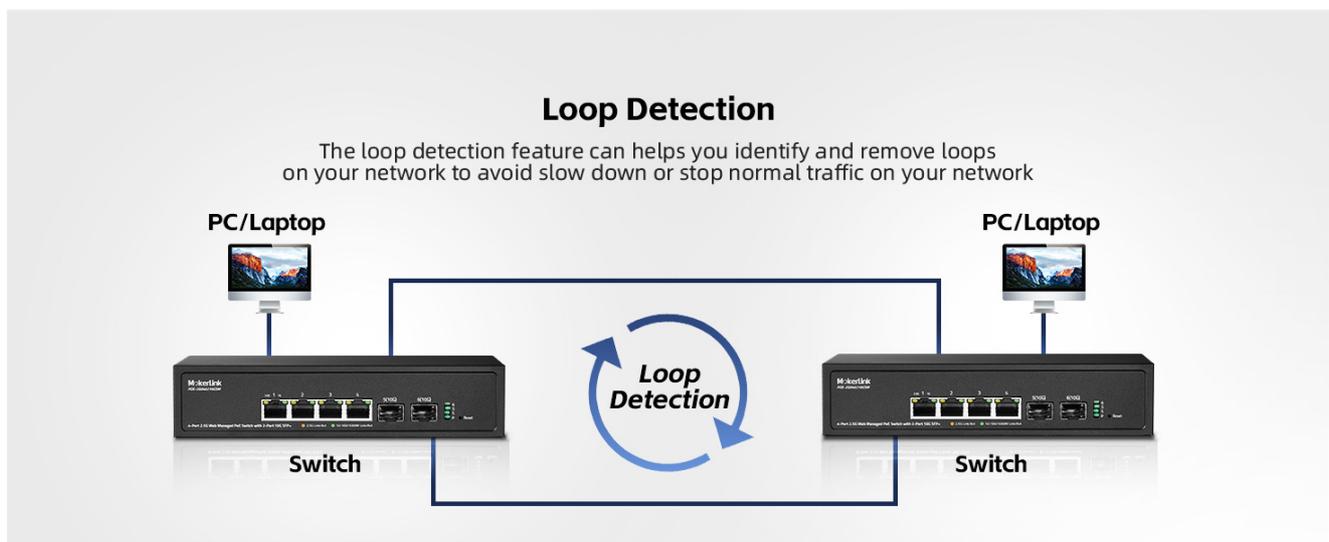

Figure 5.3: QoS Prioritization Example

5.3 LACP (Link Aggregation Control Protocol)

LACP allows you to bundle multiple physical links into a single logical link, increasing bandwidth and providing link redundancy. This is useful for connecting to servers or other switches.

5.4 STP/RSTP (Spanning Tree Protocol/Rapid Spanning Tree Protocol)

STP/RSTP prevents network loops, which can cause broadcast storms and network instability. These protocols ensure a loop-free topology by blocking redundant paths.

5.5 IGMP Snooping (Internet Group Management Protocol)

IGMP Snooping optimizes multicast traffic by forwarding it only to ports where multicast receivers are present, preventing unnecessary flooding of multicast packets across the network.

5.6 Jumbo Frame Support

The switch supports Jumbo Frames up to 10Kbytes, which can improve network efficiency for large data transfers

by reducing the number of packets processed.

6. PoE Functionality

The MokerLink switch provides Power over Ethernet (PoE) on ports 1-4, adhering to IEEE 802.3af/at standards. This allows compatible devices to receive both data and power over a single Ethernet cable.
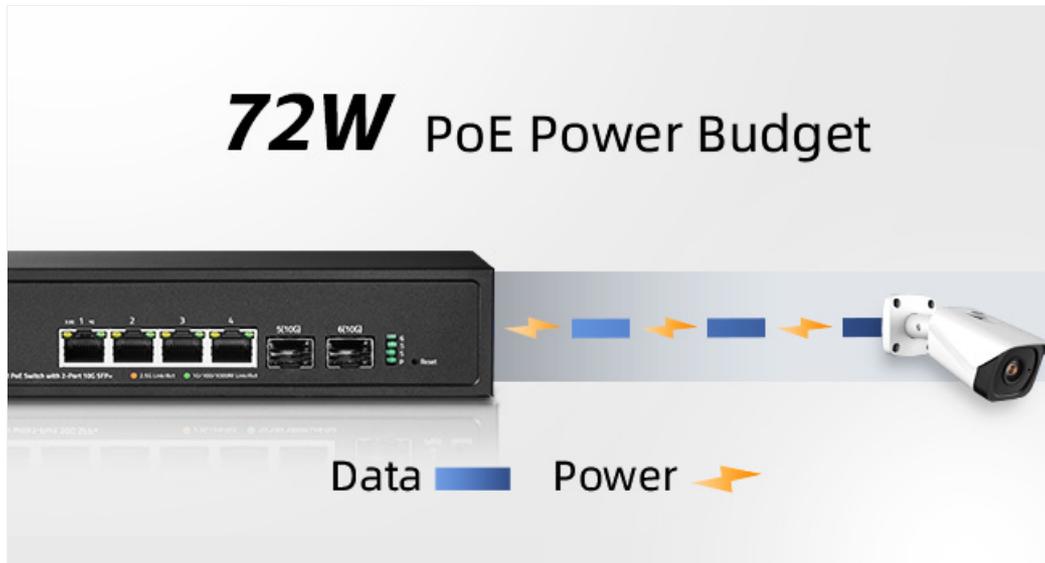

Figure 6.1: PoE+ IEEE 802.3af/at Support

- **Standard Compliance:** IEEE 802.3af (up to 15.4W per port) and IEEE 802.3at (PoE+, up to 30W per port).
- **Per Port Power:** Each PoE port can deliver up to 30W.
- **Total Power Budget:** The switch has a total PoE power budget of 78W. Ensure the total power consumption of all connected PoE devices does not exceed this limit.
- **Note:** This switch does not support passive 24V PoE. Only connect devices compatible with IEEE 802.3af/at standards.

7. Maintenance

The MokerLink switch is designed for low maintenance and reliable operation.

- **Fanless Design:** The fanless design eliminates moving parts, reducing the risk of mechanical failure and ensuring quiet operation. This also minimizes dust accumulation inside the device.
- **Durable Metal Casing:** The robust metal casing provides protection and aids in passive heat dissipation.
- **Cleaning:** Periodically clean the exterior of the switch with a soft, dry cloth. Do not use liquid or aerosol cleaners. Ensure ventilation openings are clear of obstructions.
- **Environment:** Operate the switch within its specified temperature and humidity ranges to ensure optimal performance and longevity. Avoid placing it in direct sunlight or near heat sources.

8. Troubleshooting

If you encounter issues with your MokerLink switch, refer to the following troubleshooting tips:

- **No Power:** Ensure the power adapter is securely connected to both the switch and a working power outlet. Check the PWR LED indicator.
- **No Link on Port:** Verify that the Ethernet or SFP+ cable is properly connected at both ends. Check the link status LEDs on the switch and the connected device. Ensure the connected device is powered on and functioning correctly.

- **Web Interface Unreachable:**

    - Confirm your computer's IP address is in the same subnet as the switch (default: 192.168.2.1).
    - Try pinging the switch's IP address (192.168.2.1).
    - If the switch was previously configured with DHCP client mode and lost its IP, it might revert to a default or unassigned state. Consider setting a static IP on the switch for stability.
    - If the interface is unresponsive, try restarting the switch by briefly pressing the Reset button.

- **Random Factory Reset:** Some users have reported instances of the switch randomly factory resetting. If this occurs, reconfigure the switch using the default IP (192.168.2.1) and settings. Ensure the switch is in a stable environment and has a consistent power supply.

- **Performance Issues:**

    - Check cable quality; use Cat5e/6/6a for 2.5G and appropriate fiber/DAC for 10G SFP+ connections.
    - Verify that connected devices support the desired speeds (e.g., 2.5G or 10G).
    - Review QoS settings if specific traffic types are experiencing issues.

- **Device Failure:** If the switch powers on but no traffic passes, or it becomes unconfigurable, the device may have failed. In such cases, contact MokerLink support for assistance.

- **Restoring Factory Defaults:** If you forget the login credentials or encounter persistent configuration issues, press and hold the Reset button for 5 seconds until the LEDs flash, then release. This will restore the switch to its factory default settings.

9. SPECIFICATIONS

Feature	Specification
Model Number	4x2.5G PoE + 2x10G SFP Managed
Number of Ports	4 x 2.5G PoE, 2 x 10G SFP+
Interface Type	PoE, SFP
PoE Standard	IEEE802.3af/at
Max PoE Power Per Port	30W
Total PoE Power Budget	78W
Data Transfer Rate	60 Gigabits Per Second (Backplane Bandwidth)
Packet Forwarding Rate	44.64 Mpps
Jumbo Frame	10 Kbytes
MAC Address Table Size	4K
Case Material	Metal
Cooling	Fanless
Voltage	24 Volts (Input for power adapter)
Item Weight	2.16 pounds

Feature	Specification
Package Dimensions	8.74 x 8.43 x 2.13 inches
Compatible Devices	Camera, Desktop, Gaming Console, Server

10. WARRANTY AND SUPPORT

MokerLink products are designed for reliability and performance. For warranty information, technical support, or service inquiries, please contact MokerLink customer support through their official channels or the retailer from whom the product was purchased.

Please retain your proof of purchase for warranty claims.