QNAP QSW-L3205-1C4T-US

QNAP QSW-L3205-1C4T-US 5-Port Multi-Gig 10GbE Lite-Managed Network Switch User Manual

Model: QSW-L3205-1C4T-US | Brand: QNAP

1. INTRODUCTION

The QNAP QSW-L3205-1C4T-US is a 5-Port Multi-Gig 10GbE Lite-Managed Network Switch designed to enhance network performance and manageability. This switch provides a balance of essential features, simplified configuration, and cost efficiency for optimized high-speed networking. It is ideal for environments requiring high bandwidth, such as video editing, data backup, and surveillance streaming, ensuring smooth and lag-free performance. The QSW-L3205-1C4T-US offers practical advanced features including LACP, VLAN, QoS, and traffic monitoring, allowing for full control over key network connections.
Key features include:

- Four 10GbE RJ45 ports (10G/5G/2.5G/1G/100M) and one 10GbE SFP+ (10G/1G) / RJ45 (10G/5G/2.5G/1G/100M) combo port for versatile network setups.
- LACP link aggregation support with up to 20Gbps total bandwidth.
- QoS / CoS / DSCP intelligent scheduling for uninterrupted VoIP, streaming, and backups.
- VLAN segmentation to improve departmental network efficiency.
- IGMP Snooping and 12K jumbo frames for IPTV and NVR multi-stream environments.
- QSS (QNAP Switch System) and Qfinder Pro for easy firmware updates.

2. PACKAGE CONTENTS

Verify that all items listed below are included in your package. If any items are missing or damaged, please contact your retailer or QNAP support.

- QNAP QSW-L3205-1C4T-US Network Switch
- Power Supply
- Power Cord
- Bracket Screws
- Anchors
- Rubber Feet

- Installation Guide

Smarter 10GbE Connectivity

Upgrade from unmanaged switches to Lite Managed performance. The QSW-L3208-2C6T delivers full 10GbE multi-gig connections with VLAN, QoS, and traffic monitoring to boost efficiency and simplify troubleshooting. Perfect for video editing, backups, and team collaboration.
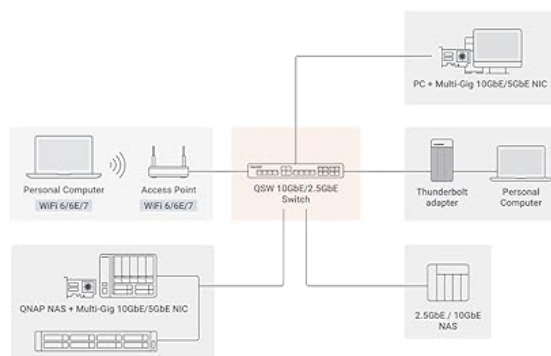
Figure 2.1: QNAP QSW-L3205-1C4T-US Package Contents

3. PRODUCT OVERVIEW

The QSW-L3205-1C4T-US is a compact and durable network switch designed for high-performance networking. It features a robust metal casing that ensures stable performance and effective heat dissipation, preventing unexpected slowdowns or downtime.

Front Panel

Figure 3.1: Front Panel Layout

- **Power LED:** Indicates power status.
- **Loop LED:** Indicates a network loop detection.
- **Reset Button:** Used to reset the device to factory defaults.
- **RJ45 Ports (1-4):** Four 10GbE RJ45 ports supporting 10G/5G/2.5G/1G/100M speeds. Each port has Link/Activity and Speed LEDs.
- **SFP+/RJ45 Combo Port (5):** One 10GbE SFP+ (10G/1G) or RJ45 (10G/5G/2.5G/1G/100M) combo port. This port can be used with either an SFP+ transceiver or an RJ45 cable, but not both simultaneously. It also has Link/Activity and Speed LEDs.
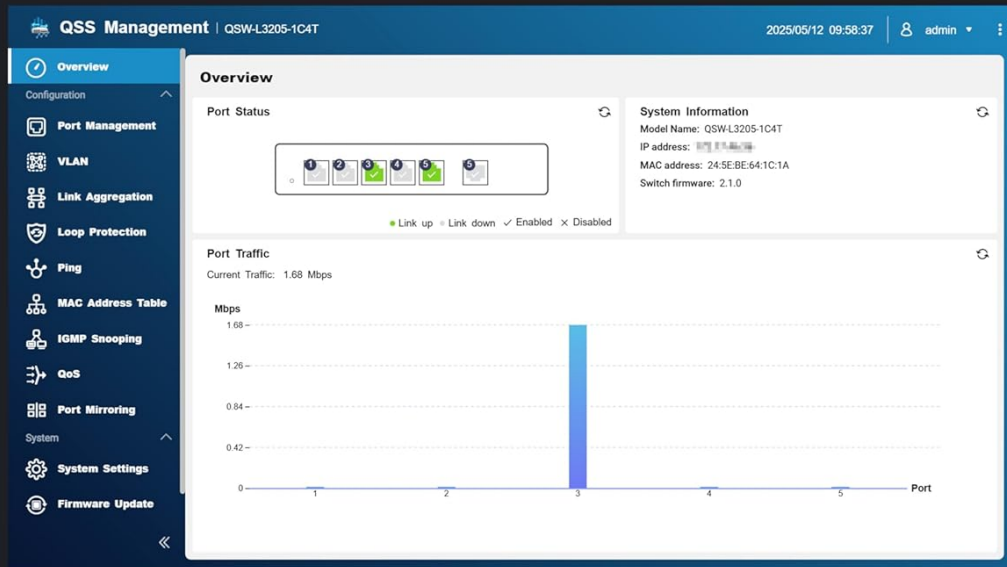
Rear Panel

Figure 3.2: Rear Panel Layout

- **DC Power Input:** Connects to the provided power adapter.
- **Ventilation:** Ensures proper airflow for heat dissipation.
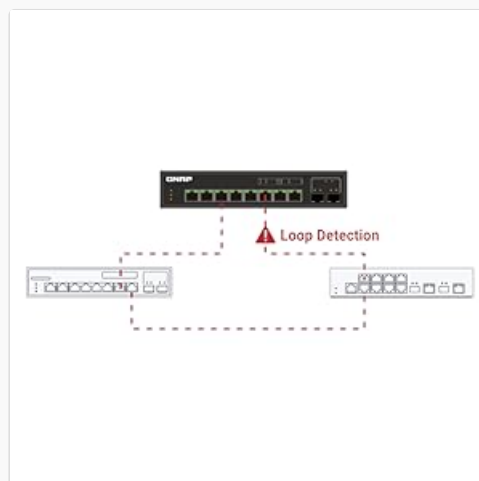
Physical Design

The switch features a compact, all-metal housing designed for durability and efficient heat management. This fanless design ensures silent operation, making it suitable for various environments without contributing to noise pollution.

4. SETUP

Follow these steps to set up your QNAP QSW-L3205-1C4T-US network switch.

4.1 Physical Installation

1. **Placement:** Choose a stable, flat surface or a suitable location for wall mounting. Ensure adequate ventilation around the switch.
2. **Attach Rubber Feet (Optional):** If placing on a flat surface, attach the included rubber feet to the bottom of the switch to prevent slipping and provide minor elevation for airflow.
3. **Connect Power:** Connect the power cord to the power adapter, and then plug the adapter into the DC power input on the rear panel of the switch. Plug the other end of the power cord into a power outlet. The Power LED on the front panel should illuminate.

4.2 Network Connections

1. **Connect Devices:** Use standard Ethernet cables (Cat 6a or higher recommended for 10GbE) to connect your network devices (e.g., computers, NAS, servers, routers) to the RJ45 ports (1-4) on the front panel.
2. **SFP+ / RJ45 Combo Port:** For fiber optic connections, insert a compatible SFP+ transceiver into the combo port (Port 5) and connect a fiber optic cable. Alternatively, for an additional RJ45 connection, use an Ethernet cable in the RJ45 part of the combo port. Note that only one type of connection can be active on this port at a time.
3. **Verify Connections:** Once devices are connected, observe the Link/Activity LEDs for each port. A solid green or amber light indicates a successful link, and a blinking light indicates data activity.

Figure 4.1: Simple Switch Setup via QSS

5. OPERATING INSTRUCTIONS

The QSW-L3205-1C4T-US is a Lite-Managed switch, offering a balance of plug-and-play simplicity with essential management features. For basic operation, simply connect your devices, and the switch will automatically negotiate the optimal speed.

5.1 Automatic Speed Negotiation

Each RJ45 port on the switch supports auto-negotiation for 10G, 5G, 2.5G, 1G, and 100M speeds. The switch will automatically detect the speed of the connected device and adjust accordingly. The Speed LEDs will indicate the current connection speed.

5.2 Accessing Lite Management Features

For advanced configuration and monitoring, use the QNAP Switch System (QSS) web interface or Qfinder Pro utility. Refer to the QNAP website for the latest QSS user manual and Qfinder Pro download.

Figure 5.1: Full 10GbE Performance Network Diagram

6. LITE MANAGEMENT FEATURES

The QSW-L3205-1C4T-US provides several lite management features to optimize your network.

6.1 Link Aggregation (LACP)

LACP allows you to combine multiple physical links into a single logical link, increasing bandwidth and providing redundancy. This is particularly useful for connecting to NAS devices or servers that require higher throughput than a single 10GbE connection can provide.

6.2 VLAN Segmentation

Virtual Local Area Networks (VLANs) allow you to logically segment your network into smaller broadcast domains. This can improve network security, reduce broadcast traffic, and enhance overall network efficiency by isolating different departments or types of traffic.

6.3 Quality of Service (QoS)

QoS features (CoS / DSCP) enable you to prioritize network traffic. This ensures that critical applications, such as VoIP, video streaming, or data backups, receive sufficient bandwidth and experience minimal latency, even during periods of high network utilization.

6.4 Traffic Monitoring

The QSS interface provides tools for monitoring network traffic, allowing you to view real-time data usage per port. This helps in identifying bandwidth bottlenecks and troubleshooting network performance issues.

6.5 Firmware Updates

Regular firmware updates are crucial for maintaining security and optimal performance. The QSS and Qfinder Pro utilities allow for one-click firmware updates, simplifying the process and keeping your system secure and up-to-

date.

Figure 6.1: Understanding Lite Managed Switches

7. MAINTENANCE

Proper maintenance ensures the longevity and reliable operation of your network switch.

- **Cleaning:** Regularly clean the exterior of the switch with a soft, dry cloth. Avoid using liquid or aerosol cleaners. Ensure ventilation openings are free from dust and obstructions.
- **Firmware:** Keep the switch firmware updated to the latest version. This provides security patches, bug fixes, and performance improvements. Use QSS or Qfinder Pro for updates.
- **Environment:** Operate the switch within its specified environmental conditions (temperature, humidity) to prevent overheating and damage. Ensure good airflow around the device.
- **Cable Management:** Ensure all network cables are securely connected and properly routed to prevent accidental disconnections or damage.

8. TROUBLESHOOTING

This section provides solutions to common issues you might encounter with your QSW-L3205-1C4T-US switch.

8.1 No Power

- **Check Power Cord:** Ensure the power cord is securely connected to the switch and the power outlet.
- **Verify Outlet:** Test the power outlet with another device to confirm it is functional.
- **Power Adapter:** Ensure the power adapter is correctly connected to the switch.

8.2 No Link/Activity LED

- **Check Cable:** Ensure the Ethernet cable is securely connected to both the switch port and the connected device. Try a different cable.
- **Device Status:** Verify that the connected device is powered on and its network adapter is functioning correctly.
- **Port Compatibility:** Ensure the connected device's network adapter supports the speeds offered by the switch ports (10G/5G/2.5G/1G/100M).
- **SFP+ Module:** If using the SFP+ combo port, ensure the SFP+ transceiver is correctly inserted and compatible.

8.3 Slow Network Speed

- **Cable Quality:** For Multi-Gigabit speeds, use Cat 6a or higher Ethernet cables. Lower category cables may limit performance.
- **Device Capability:** Ensure all connected devices and their network adapters support the desired Multi-Gigabit speeds.
- **Traffic Monitoring:** Use QSS to monitor port traffic and identify any heavily utilized ports or devices.
- **Firmware:** Ensure the switch has the latest firmware installed.

8.4 Network Loop Detected (Loop LED On)

- **Identify Loop:** A network loop occurs when there are redundant paths between network devices, causing broadcast storms. Disconnect devices one by one to identify the source of the loop.
- **Cable Configuration:** Review your network cabling to ensure there are no unintended loops.
- **Spanning Tree Protocol (STP):** If configured, ensure STP is enabled and functioning correctly to prevent loops.

9. SPECIFICATIONS

Feature	Description
Model Number	QSW-L3205-1C4T-US
Brand	QNAP
Number of Ports	5
RJ45 Ports	4 x 10GbE (10G/5G/2.5G/1G/100M)
SFP+ / RJ45 Combo Port	1 x 10GbE SFP+ (10G/1G) / RJ45 (10G/5G/2.5G/1G/100M)
Interface Type	RJ45, SFP+
Switching Capacity	100 Gbps (Full Duplex)
Jumbo Frame Support	12K bytes
Management Type	Lite-Managed
Item Weight	4 pounds
Package Dimensions	12.5 x 9 x 2.5 inches
Color	Black
Compatible Devices	Desktop, Laptop, Printer

10. WARRANTY AND SUPPORT

QNAP products are designed for reliability and performance. For detailed warranty information, please refer to the warranty card included in your product package or visit the official QNAP website.

10.1 Technical Support

If you encounter any issues that cannot be resolved using the troubleshooting guide, please contact QNAP Technical Support. Before contacting support, ensure you have the following information ready:

- Product Model Number (QSW-L3205-1C4T-US)
- Serial Number
- Description of the issue
- Steps taken to troubleshoot

You can find support resources, FAQs, and contact information on the official QNAP website:www.qnap.com