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Lenel LNL-4420

Lenel LNL-4420 Advanced Dual Reader Controller Board User Manual

Model: LNL-4420

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1. Introduction

This manual provides essential information for the installation, operation, and maintenance of the Lenel LNL-4420 Advanced Dual Reader Controller Board. The LNL-4420 is designed to interface up to 64 doors, along with auxiliary inputs and outputs, to an OnGuard access control system. It offers advanced features such as BACnet protocol support, elevator control, and robust security measures.

2. Safety Information

Please read and understand all safety instructions before installing or operating the LNL-4420 controller board. Failure to follow these instructions may result in electric shock, fire, or damage to the equipment.

- Installation should only be performed by qualified personnel.
- Disconnect all power sources before performing any wiring or maintenance.
- Ensure proper grounding to prevent electrical hazards.
- Do not expose the device to moisture or extreme temperatures.
- Use only approved power supplies and cables.

3. Product Overview

The Lenel LNL-4420 is an advanced controller board designed for secure and scalable access control systems. It integrates various functionalities to manage multiple access points efficiently.

3.1 Key Features

- **BACnet Protocol Support:** Supports via up to 63 total inputs and virtual outputs for building management system integration.

- **Elevator Control:** Capable of controlling up to 128 floors, with individual extended held open and strike times (ADA compliant). A dedicated input for cabinet tamper and power failure status.
- **Enhanced Security:** Features Advanced Encryption Standard (AES) 128-bit algorithm for secure communications.
- **Network Connectivity:** Supports DHCP and fixed IP addressing, with DNS device naming through DHCP extended commands.
- **Memory:** Includes 16 MB of on-board, non-volatile flash memory for badge data and future applications, plus battery-backed storage for 50,000 events.
- **Firmware Management:** Firmware is stored in flash memory, supporting background download of updates.
- **Card Format Support:** Supports up to 16 different formats (8 card formats and 8 asset formats).
- **Biometric Integration:** Biometric template storage support for Bioscrypt and ANSI/INCITS 378 templates.
- **Anti-Passback:** Advanced anti-passback capabilities and support for up to 32,000 access level permissions.

3.2 Board Components

The following image illustrates the main components of the LNL-4420 controller board:

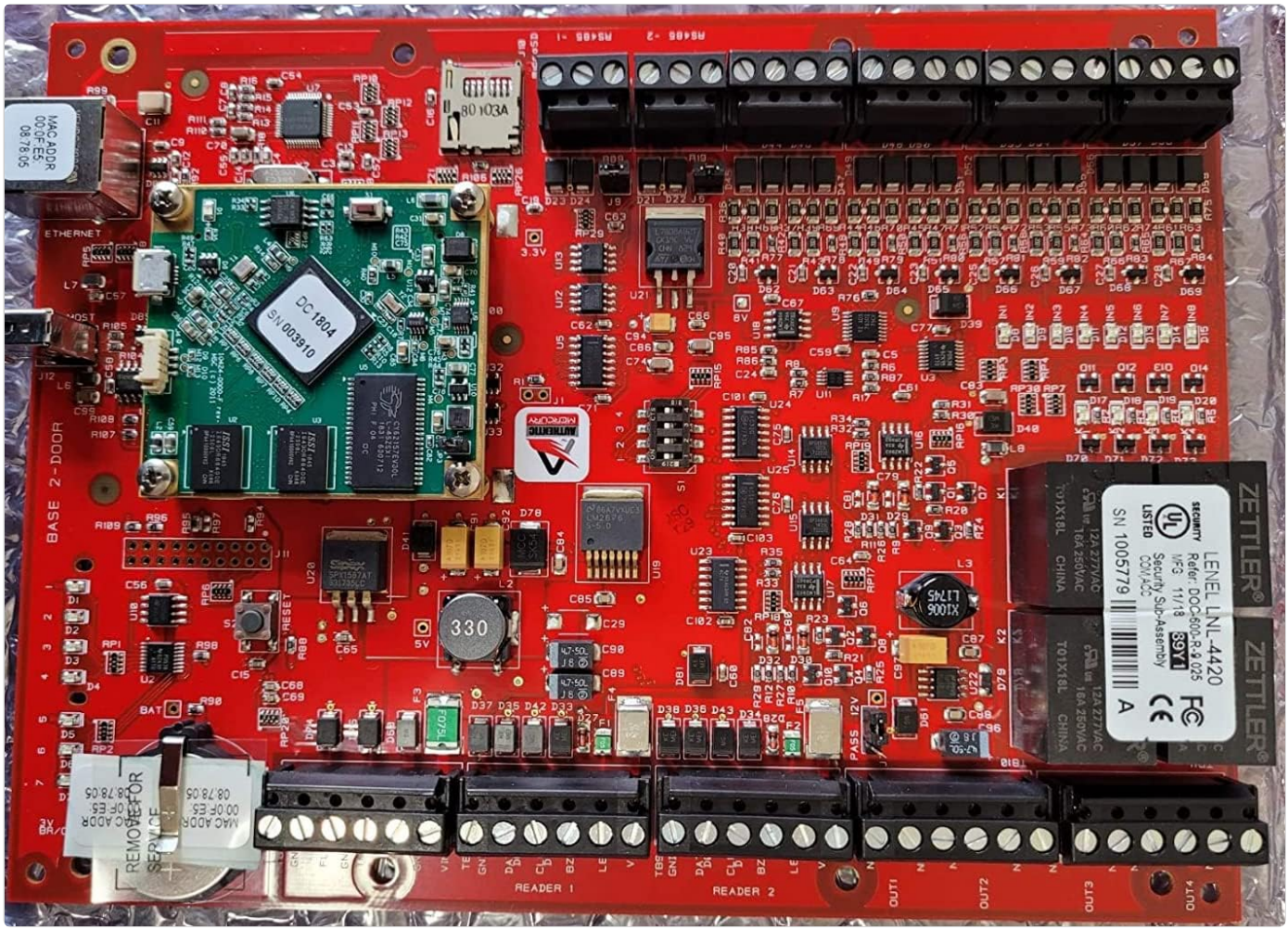


Figure 1: Lenel LNL-4420 Advanced Dual Reader Controller Board. This image displays the full circuit board with various components, including the Ethernet port, MAC address labels, reader connections, and output terminals. Key chips and connectors are visible across the red PCB.

Key components visible on the board include:

- **Ethernet Port:** For network connectivity and communication with the OnGuard system.
- **MAC Address Labels:** Identifiers for network configuration, such as 'MAC ADDR 00:0F:E5:08:78:05'.
- **Reader Connections (READER 1, READER 2):** Terminals for connecting access card readers.
- **Output Terminals (OUT1, OUT2, OUT3, OUT4):** For controlling locks or other devices.

- **Input Terminals (IN1-IN16):** For auxiliary inputs such as door contacts or request-to-exit buttons.
- **Power Input:** Terminals for connecting the main power supply (e.g., 12V, 5V).
- **Battery Backup (BAT):** Connection point for a battery to maintain event storage during power outages. A 'REMOVE FOR SERVICE' label is present near the battery connector.
- **Reset Button:** For resetting the board.
- **Status LEDs:** Indicators for power, network activity, and reader status.

4. Setup and Installation

Proper installation is crucial for the reliable operation of the LNL-4420 board. Ensure all local electrical codes and safety regulations are followed.

4.1 Mounting

1. Select a secure, dry location with adequate ventilation, away from direct sunlight and sources of electromagnetic interference.
2. Mount the LNL-4420 board inside a suitable enclosure using the provided mounting hardware.
3. Ensure sufficient space around the board for wiring and heat dissipation.

4.2 Wiring Connections

All wiring should be performed with power disconnected.

- **Power Supply:** Connect a regulated 12V DC power supply to the designated power input terminals. Observe polarity.
- **Ethernet:** Connect a standard Ethernet cable from your network switch or router to the Ethernet port on the board.
- **Readers:** Connect access card readers to the READER 1 and READER 2 terminals. Refer to the reader's specific wiring diagram for proper connections (e.g., Data 0, Data 1, V+, GND).
- **Outputs:** Connect door locks, alarms, or other controlled devices to the OUT1-OUT4 terminals. Ensure correct voltage and current ratings.
- **Inputs:** Connect door contacts, request-to-exit buttons, or other sensors to the IN1-IN16 terminals.
- **Battery Backup:** Connect a compatible battery to the BAT terminals for uninterrupted operation and event logging during power failures.

4.3 Initial Power-Up

1. Double-check all wiring connections for correctness and security.
2. Apply power to the LNL-4420 board.
3. Observe the status LEDs. The power LED should illuminate, and network activity LEDs should indicate connection.

5. Operating Instructions

The LNL-4420 controller board operates in conjunction with the Lenel OnGuard access control system software. All configuration and management are performed through the OnGuard interface.

5.1 Software Configuration (OnGuard)

1. Launch the Lenel OnGuard software on your management workstation.
2. Add the LNL-4420 controller to the system, providing its network address (IP address or DNS name).
3. Configure the connected readers, specifying their type and associated doors.

4. Define access levels, schedules, and cardholder permissions within the OnGuard software.
5. Assign inputs and outputs for specific functions (e.g., door status, alarm triggers, lock control).
6. Utilize advanced features such as anti-passback, elevator control, and BACnet integration as required by your system design.

5.2 Firmware Updates

Firmware updates are managed through the OnGuard system. The LNL-4420 supports background downloads, minimizing downtime during updates. Always follow the specific instructions provided with the firmware update package.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your LNL-4420 controller board.

- **Environmental Check:** Periodically inspect the installation environment to ensure it remains dry, clean, and within specified temperature ranges.
- **Wiring Inspection:** Check all wiring connections for signs of wear, corrosion, or looseness. Re-secure any loose connections.
- **Firmware:** Keep the controller's firmware updated to the latest version available from Lenel to benefit from new features, security enhancements, and bug fixes.
- **Battery Backup:** If a battery backup is installed, check its condition periodically and replace it according to the manufacturer's recommendations. The "REMOVE FOR SERVICE" label on the battery connector indicates it should be disconnected during servicing to prevent accidental power-on.
- **Cleaning:** Gently clean the board with a soft, dry, lint-free cloth if dust accumulates. Do not use liquid cleaners or solvents.

7. Troubleshooting

This section provides solutions to common issues you might encounter with the LNL-4420 controller board.

Problem	Possible Cause	Solution
Controller not powering on.	No power supply, incorrect wiring, faulty power supply.	Verify power connections, check power supply output, ensure battery is connected correctly if used.
No network connectivity.	Loose Ethernet cable, incorrect IP configuration, network issue.	Check Ethernet cable, verify IP settings in OnGuard, ensure network infrastructure is operational.
Reader not responding.	Incorrect reader wiring, faulty reader, reader not configured in OnGuard.	Inspect reader wiring, test reader with known good unit, confirm reader configuration in OnGuard.
Door not locking/unlocking.	Incorrect output wiring, faulty lock, access level issue.	Check output wiring, test lock mechanism, verify access levels and schedules in OnGuard.
Event log not updating.	Communication issue with OnGuard, full memory.	Verify network connection to OnGuard. The LNL-4420 has substantial event storage, but ensure regular data synchronization.

8. Specifications

Technical specifications for the Lenel LNL-4420 Advanced Dual Reader Controller Board:

- **Brand:** Lenel
- **Model:** LNL-4420
- **Compatible Devices:** Personal Computer (for OnGuard software)
- **RAM Memory Technology:** DDR
- **Memory Storage Capacity:** 16 MB (flash memory)
- **RAM Memory Maximum Size:** 16 MB
- **Memory Slots Available:** 16 (refers to internal memory architecture)
- **System Bus Standard Supported:** SATA 3 (refers to internal component interface)
- **UPC:** 643690810056
- **ASIN:** B08TTGGS77
- **GTIN:** 643690810056
- **Manufacturer:** Lenel
- **Warranty Description:** Manufacturer

9. Warranty Information

The Lenel LNL-4420 Advanced Dual Reader Controller Board is covered by a manufacturer's warranty. For specific terms, conditions, and duration of the warranty, please refer to the documentation provided by Lenel or contact Lenel customer support directly. Keep your proof of purchase for warranty claims.

10. Customer Support

For technical assistance, troubleshooting beyond this manual, or warranty inquiries, please contact Lenel customer support or your authorized Lenel dealer.

- **Lenel Website:** www.lenel.com
- Refer to the official Lenel documentation for the OnGuard system for detailed software configuration and advanced features.

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