

Lenel LNL-2220

Lenel LNL-2220 Intelligent Dual Reader Controller (IDRC) User Manual

Model: LNL-2220 | Brand: Lenel

1. OVERVIEW

The Lenel LNL-2220 Intelligent Dual Reader Controller (IDRC) is a single-board solution designed for integrating one or two doors into an OnGuard access control system. This controller allows for expansion of capabilities through additional I/O and reader interface modules connected via its downstream port. The LNL-2220 facilitates direct Ethernet connection from an entry point to the OnGuard server, maintaining the security, functionality, and modularity inherent in Lenel's hardware platform. It is engineered for scalability, suitable for a wide range of access control applications.

In scenarios of communication loss, the LNL-2220 is designed to sustain nearly all local functionalities until the server connection is re-established. It utilizes native Ethernet communications and an advanced 32-bit processor, enabling high-throughput communication to the host computer via its Ethernet port (up to eight times faster than serial connections) or through RS-232 at up to 115.2 Kbps. The controller can store up to 250,000 cardholders in non-volatile flash memory and supports selective downloads for extensive cardholder databases. Its downstream RS-485 two-wire port can connect up to 32 devices (supporting a maximum of 64 doors). The two on-board reader ports are compatible with Data1/Data0, Clock/Data, Bioscrypt RS-485 readers, and bidirectional RS-485 Open Supervised Device Protocol (OSDP) communications. Each LNL-2220 supports up to eight distinct card formats. Additionally, it features eight inputs for normally open, normally closed, supervised, and unsupervised circuits, and four output relays for fail-safe or fail-secure operations.

2. PRODUCT FEATURES

- **On-board Ethernet 10/100Base-T port:** Provides up to 8 times greater throughput than serial-to-Ethernet converters. Supports DHCP and fixed IP addressing.
- **DNS device naming:** Achieved through DHCP extended commands.
- **Memory:** 6 MB of available on-board, non-volatile flash memory.
- **Event Storage:** Battery-backed, non-volatile storage for 50,000 events.
- **Firmware:** Stored in flash memory, with support for background download of firmware updates.
- **Cardholder Capacity:** Stores up to 250,000 cardholders in non-volatile flash memory.
- **Reader Ports:** Two on-board reader ports supporting Data1/Data0, Clock/Data, Bioscrypt RS-485, and OSDP

communications.

- **Card Formats:** Supports up to eight different card formats.
- **Inputs:** Eight inputs for various circuit types (normally open, normally closed, supervised, unsupervised).
- **Output Relays:** Four output relays supporting fail-safe or fail-secure operation.

3. SETUP AND INSTALLATION

This section provides general guidelines for setting up your LNL-2220 controller. For detailed wiring diagrams and specific installation procedures, refer to the official Lenel installation guide provided with your product or available on the LenelS2 support website.

1. **Mounting:** Securely mount the LNL-2220 controller in a suitable enclosure, ensuring proper ventilation and protection from environmental factors.
2. **Power Connection:** Connect the appropriate DC power supply to the main power connector. Verify power requirements before connection.
3. **Network Connection:** Connect the Ethernet port to your network infrastructure. Ensure proper IP configuration (DHCP or fixed IP) as per your system requirements.
4. **Reader Connections:** Connect your access control readers to the on-board reader ports. Ensure correct wiring for Data1/Data0, Clock/Data, or RS-485 (OSDP/Bioscrypt) protocols.
5. **Input/Output Wiring:** Wire any necessary inputs (e.g., door contacts, request-to-exit buttons) and outputs (e.g., door strikes, alarms) to the designated terminals.
6. **System Integration:** Integrate the LNL-2220 with your OnGuard system software. This typically involves device discovery, configuration, and database synchronization.
7. **Testing:** Thoroughly test all connected readers, inputs, and outputs to ensure correct operation and communication with the OnGuard system.

4. OPERATION

The LNL-2220 operates as an integral part of the Lenel OnGuard access control system. Once installed and configured, its operation is primarily managed through the OnGuard software interface. The controller processes access requests, monitors door status, and manages connected devices autonomously, especially during communication outages with the central server.

- **Access Control:** When a cardholder presents a credential to a connected reader, the LNL-2220 verifies the credential against its stored database and programmed access rules.
- **Event Logging:** All access attempts, door events, and system status changes are logged by the controller and transmitted to the OnGuard server.
- **Offline Mode:** In the event of network disconnection, the LNL-2220 continues to operate based on its last synchronized configuration and stored cardholder data, ensuring uninterrupted local access control.
- **Firmware Updates:** Firmware updates can be performed remotely via the OnGuard system, often in the background to minimize operational disruption.

5. MAINTENANCE

Regular maintenance ensures the longevity and reliable performance of your LNL-2220 controller.

- **Environmental Checks:** Ensure the controller is kept within its specified operating temperature and humidity ranges. Keep the enclosure free from dust and debris.

- **Firmware Updates:** Periodically check for and apply firmware updates released by Lenel to ensure optimal performance, security, and compatibility.
- **Battery Backup:** The controller features battery-backed memory. While not user-serviceable for replacement, ensure the system's power supply is stable to prolong its life.
- **Connection Integrity:** Periodically inspect all wiring connections for tightness and signs of wear or corrosion.
- **System Monitoring:** Monitor the OnGuard system logs for any error messages or unusual activity related to the LNL-2220.

6. TROUBLESHOOTING

This section offers general troubleshooting tips. For complex issues, contact Lenel technical support or a certified technician.

Problem	Possible Cause	Solution
Controller not powering on.	No power supply, incorrect voltage, faulty power cable.	Verify power supply connection and voltage. Check power cable integrity.
No network communication.	Ethernet cable disconnected, incorrect IP configuration, network issue.	Check Ethernet cable. Verify IP settings in OnGuard software. Consult network administrator.
Reader not responding.	Incorrect wiring, faulty reader, incompatible reader type, configuration error.	Inspect reader wiring. Ensure reader type is supported and correctly configured in OnGuard. Test with a known working reader.
Access denied for valid card.	Card not enrolled, access level not assigned, time zone restriction, controller database not updated.	Verify cardholder enrollment and access levels in OnGuard. Check time zone settings. Ensure controller has synchronized with the latest database.

7. SPECIFICATIONS

Feature	Detail
Model Number	LNL-2220
Manufacturer	LENEL
Package Dimensions	10.5 x 9.5 x 2.75 inches
Item Weight	1 pounds
Memory Storage Capacity	6 MB (Flash Memory)
RAM Memory Technology	DDR
Compatible Processors	32-bit processors
Main Power Connector Type	DC power jack
Number of Ports	34 (Total, including I/O, reader, and communication ports)
Date First Available	February 8, 2019

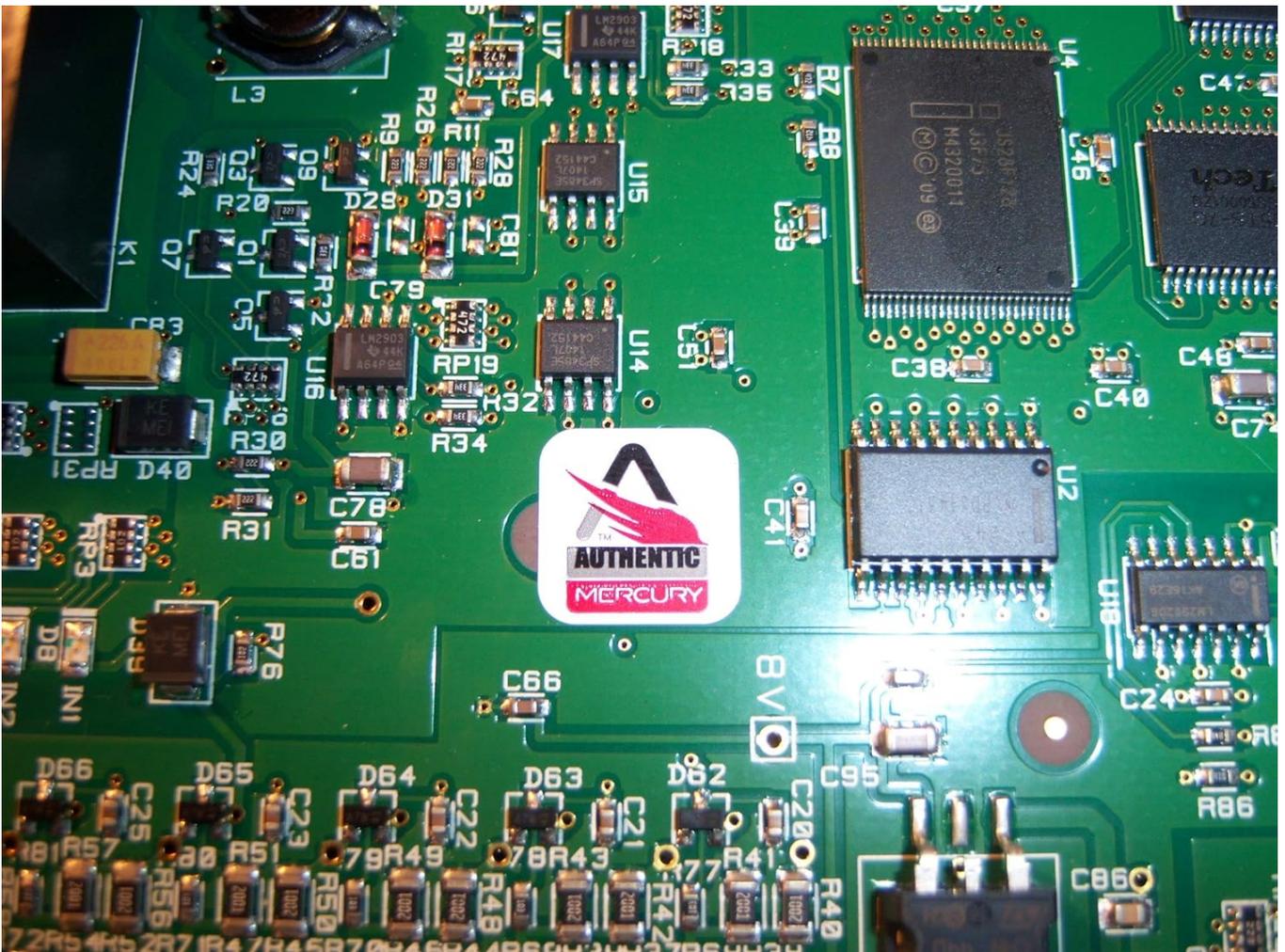


Figure 8.2: A detailed view of a section of the LNL-2220 circuit board, focusing on the Ethernet port area. A label displaying the MAC address (00-0F-E5-03-86-12) is clearly visible on a metallic component, indicating network identification details.



Figure 8.3: A close-up of the LNL-2220 circuit board, featuring the "Authentic Mercury" logo sticker. This indicates the use of Mercury Security hardware components within the controller, signifying a specific level of security and compatibility.

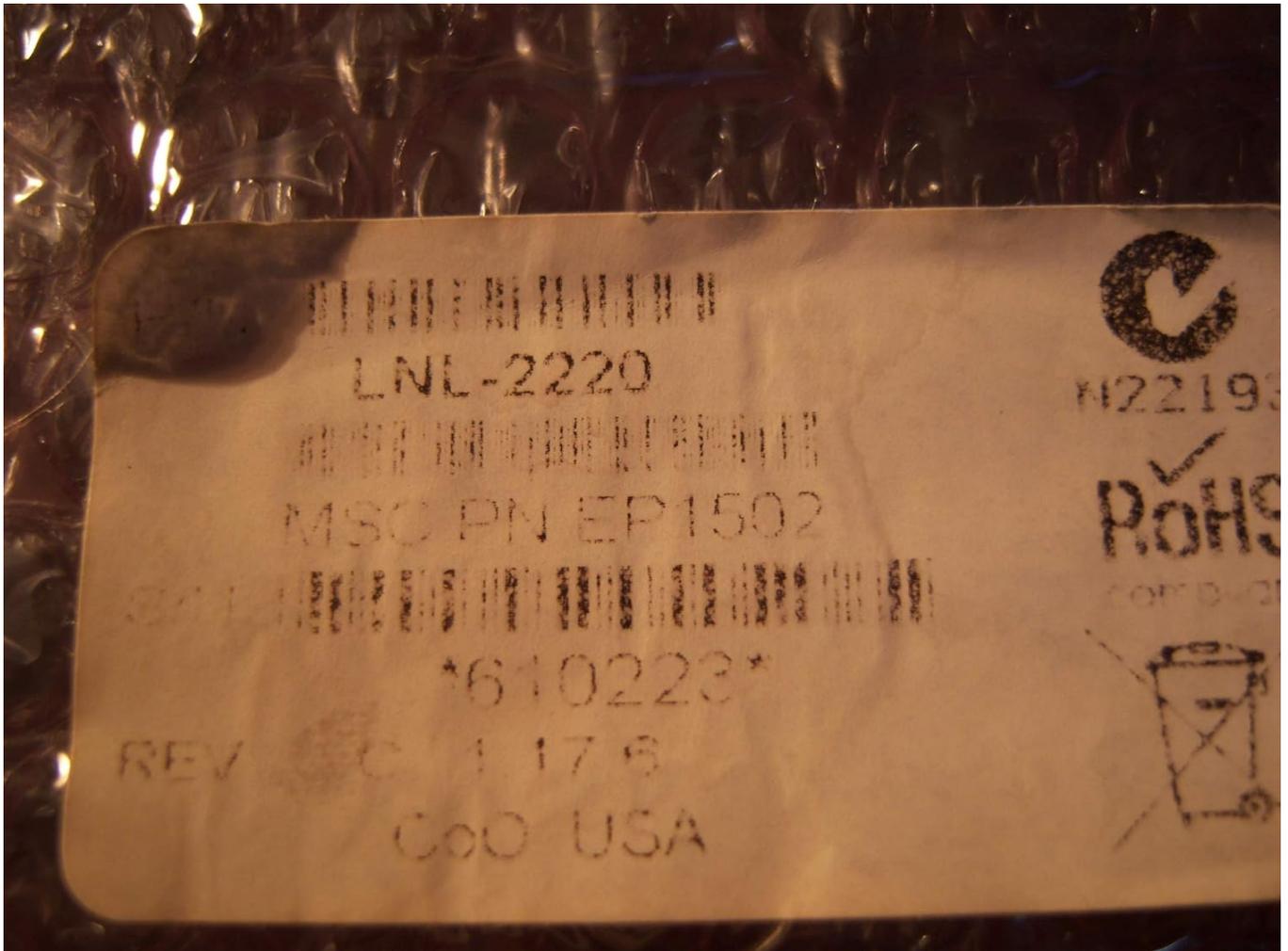


Figure 8.4: The underside of the LNL-2220 circuit board, displaying various product labels and certifications. Visible details include "LENEL LNL-2220", "SECURITY LISTED", "UL LISTED", "CE", and "C-Tick" marks, along with manufacturing date (02/15) and serial number (SN 610223).

9. WARRANTY AND SUPPORT

For information regarding product warranty, technical support, and service, please refer to the official documentation provided with your LNL-2220 controller or visit the [LenelS2 support website](#). LenelS2 provides comprehensive resources, including FAQs, troubleshooting guides, and contact information for certified technical assistance.

It is recommended to register your product upon purchase to facilitate warranty claims and receive important updates.