

## DEFENDER – ACCESS MANAGEMENT FOR THE CRITICAL INFRASTRUCTURE

Security is a top priority for enterprises managing sensitive data. CardLab Defender goes beyond standard authentication, offering advanced biometric security, multi-channel connectivity, offline identity verification and tokenized identity authorisation. This cutting-edge card is designed to secure both digital and physical environments while providing ease of use and flexibility.

### KEY FEATURES

- **Tokenized identity authorisation:** Protects user credentials by securely tokenizing identities for back-end authorisation.
- **Secure Element:** Stores sensitive data securely and processes it with the highest level of encryption.
- **Offline verification via Integrated biometric sensor:** Reliable fingerprint verification offline on the card, ensuring that only authorized users gain access.
- **NFC & Bluetooth (BLE) Connectivity:** Multiple communication channels for seamless integration across devices.
- **Wireless & Contact Recharging:** Various recharging options to keep the card powered and ready.
- **E-Paper Display:** Displays OTP (One-Time Passcodes) and information for secure logins and transaction verification.



### HOW CARDLAB DEFENDER WORKS

At the heart of our Defender solution is tokenization technology, which securely transforms user identities into unique tokens for back-end verification. This process ensures that personal data is not exposed, adding an extra layer of security to enterprise systems. The card is powered via an EAL 6+ certified secure element, which protects sensitive data with industry-leading encryption. An accurate fingerprint sensor from industry leader Fingerprints, authenticates users for quick and secure access, while the integrated e-paper display can show an OTPs for seamless logins when there is no NFC or BLE connection.

Whether employees are accessing digital workspaces, logging in to web portals, or unlocking physical doors, CardLab Defender offers a streamlined, secure solution for any organisation.

### BENEFITS TO YOUR BUSINESS

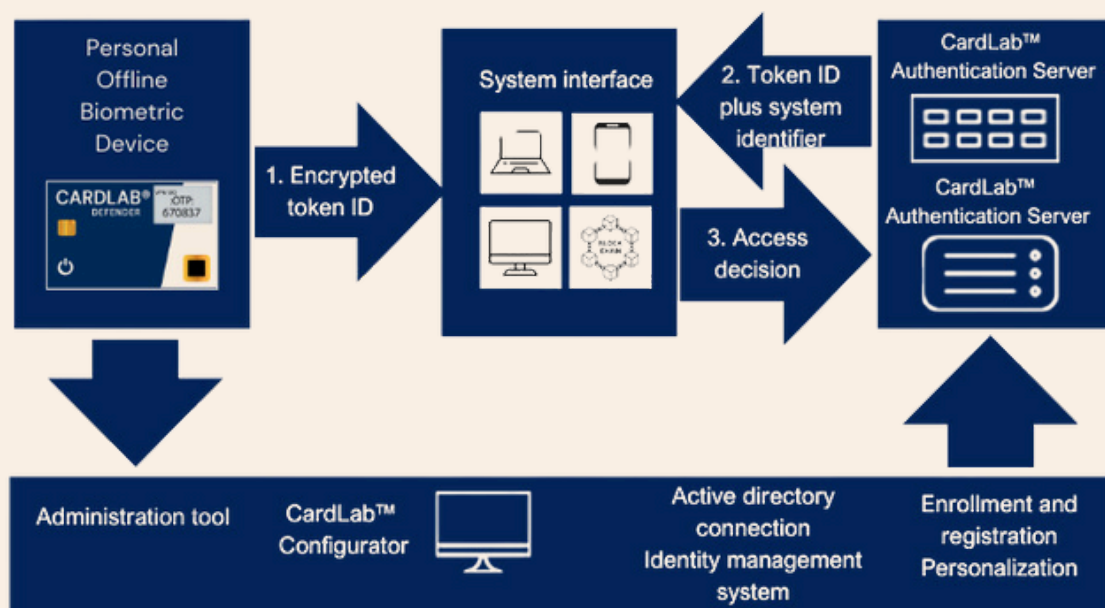
- **Robust Tokenization Security:** Tokenizes identities to verify users in a secure back-end environment, ensuring that sensitive data is never exposed.
- **Comprehensive Access Control:** Combines logical (digital) and physical access control and can be an employee ID, in a sleek three in one card.
- **User-Friendly Authentication:** The biometric sensor makes authentication fast and convenient, while the e-paper display provides easy-to-read OTPs.
- **Self-Custodian Wallet:** Acts as a secure vault platform for storing multiple applets such as payment systems, social security IDs, and driver's licenses.

## USE CASES

- **Employee Identification & Digital Login:** Securely verify employees across physical and digital access points with biometric and tokenized identity verification.
- **Web Authentication (FIDO2):** Password-free login for employees via web portals and remote desktops, with OTP verification for added security.
- **Physical Access Control:** Functions as a key card to unlock doors, providing physical access to secure office spaces and data centers.
- **Digital Banking:** Secure digital banking transactions with tokenized identity verification and OTP for enhanced financial security.
- **Time Tracking & Machine Access:** Securely track employee time and control access to critical machines and resources.

## WHY CHOOSE CARDLAB PRIVILEGE?

Defender is the ideal solution for organisations that require dynamic identity verification, leveraging tokenization technology to ensure the highest level of security and private user authentication. It provides a complete, three factor authentication solution that combines the power of biometrics, OTPs, and secure element technology. The available tokenization feature ensures that sensitive data is always protected, with identities verified in a secure back-end environment.



Authentication Server is available as a service or white label

## CUSTOMIZATION AND SUPPORT

Every enterprise has unique security needs, and CardLab Defender can be tailored to meet them. We offer customizable options for branding, card artwork, and enhanced security features. In addition, the card comes with a 12-month global warranty and is backed by CardLab's expert technical support team.

CardLab Defender combines ease of use with top-tier security, making it the perfect choice for enterprises looking to strengthen identity and access management across their digital and physical environments. By integrating tokenization, biometrics, and multi-channel connectivity, this card offers a flexible, future-proof solution for any business.

## TECHNICAL SPECIFICATION

Product Type	Biometric Access Card, with e-paper display, NFC and BLE connectivity
Secure Element	EAL6+ certified 16 bit CPU with CardLab BIO-OS <ul style="list-style-type: none"> <li>- Dual interface</li> <li>- 16 kB RAM</li> <li>- 500 kB NVM</li> </ul>
Supported Symmetric Cryptography	AES up to 256-bit, DES, 3DES
Supported Asymmetric Cryptography	ECC up to 512-bit, RSA up to 4096-bit
CardLab BIO-OS	Java Card platform 3.0.4+ added functionalities <ul style="list-style-type: none"> <li>- Support for Elliptic Curve ED25519</li> <li>- Global Platform 2.2.1</li> </ul>
Secure Hash Algorithm	<ul style="list-style-type: none"> <li>- SHA-1</li> <li>- SHA-256</li> <li>- SHA-512</li> </ul>
Additional MCU	32-bit Arm Cortex-M4F 384KB SRAM 1MB Flash BTLE 5 controller
Fingerprint Sensor	Fingerprints FPC1321
False Rejection Rate (FRR)	< 1.4%,
False Acceptance Rate (FAR)	< 0.0019%
Number of Fingerprints	Up to 10 stored in card secure element
Fingerprint Enrolment Method	Standalone or via PC application
Display	Electronic paper 1,02", 145 DPI grayscale - 80 x 128 pixels
Battery	> 500 recharging cycles
Battery Charging Method	Wireless or via contact plate
Visible Indicators	Red, Yellow, Green LEDs
Activation	Metal dome tactile switch Fingerprint sensor and metal dome switch can act as a selection button
Supported Communication Protocols	ISO 7816 ISO 14443 (13.56MHz) BLE 5.1
Graphic Options	Customizable graphics
Reader Compatibility	All 13.56MHz Pulse and Constant field readers
Operating Temperature	+5 to +40 C
Lifetime	5 years typical
Size	ISO/IEC 7810 ID-1 (85.60x53.98x0.8mm)



## Are you ready to secure your organization?

Learn how CardLab's Access, Defender, and Quardlock Backend solutions can protect your enterprise while simplifying user experience.



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