



iCLASS SE® Platform

**HIGH FREQUENCY CONTACTLESS SMART CARD FOR SECURING IDENTITIES**

- **Strong authentication** – First enterprise-ready converged card for securing physical access as well as access to IT resources.
- **Increased interoperability** – Open, standards-based solution supports future technologies and can store data for multiple applications.
- **Technology-independent security** – Multi-layered security supports the portable Secure Identity Object (SIOs®) data model.
- **Heightened privacy protection** – No traceable identifiers exchanged during card sessions, preventing data associated to a card from being divulged or cloned.

HID Global's iCLASS® Seos™ smart cards are based on a secure, open technology to manage and authenticate identities. The cards primarily address the need for securing identities for the physical access control solution (PACS) market but are also provisioned to support other applications, including One-Time Password authentication (OTP) for login into networks and other IT resources.

iCLASS Seos cards are ideal for organizations with stringent security requirements for their credential solution, as well as enterprise and government organizations looking for a cost-effective solution. As part of the iCLASS SE® platform, the cards deliver superior data integrity and privacy protection by leveraging the latest cryptographic algorithms. iCLASS Seos cards also utilize a secure messaging protocol to protect data transmission with the off-card applications providing strong authentication mechanisms to protect the communications between card and reader.

Delivering maximum interoperability, iCLASS Seos cards include a standards-based application that offers a universal card command interface. The solution also supports an ISO/IEC 7816-4 command set and data model that defines the supported interfaces between an iCLASS Seos card and the reader.

iCLASS Seos cards provide trusted management of secure identities within HID Global's iCLASS SE platform that is based on its Secure Identity Object (SIO) data model.

The iCLASS SE platform manages the secure distribution and life span of credentials. iCLASS Seos supports multiple SIOs carried on a single credential/device to secure PACS (along with any other application data). This enables applications to provide individual protected data sets for the identities in each application.

For migration purposes, the credential is available as multi-technology card that combines 125 KHz Proximity and a high frequency Seos contactless microprocessor.



SEOS

#### TECHNOLOGY FEATURES

- Available in 8K-Bytes or 16K-Bytes memory
- AES-128 bits cryptographic algorithms for data protection
- Mutual authentication protocol with generation of diversified session key to protect each card session (using secure messaging).
- Secure data storage with flexible data model (file system based) using a firewalled architecture for data separation between applications.
- Supports ISO/IEC standards: 7810, 7816 and contactless cards (14443 A).
- Contactless unique identifier: 4 bytes (random value).
- Generic command set based on ISO/IEC 7816-4.
- Hardware chip integrating co-processor with high performance for cryptographic calculations with symmetric keys.
- One Time Password generation using standards-based solution.
- Card customization available: Magnetic stripe, custom text or graphics (requires minimum quantity).

#### SECURITY FEATURES

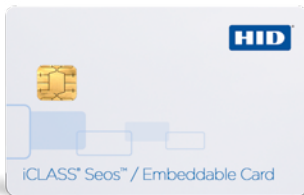
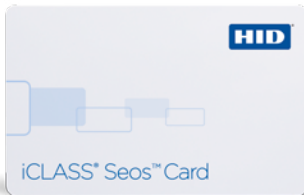
- Programmable with one or several Secure Identity Objects® (SIOs®) for each application.
- High resistance to common attacks (man in the middle, replay attacks and others).
- Available with anti-counterfeiting features such as holograms, holographic foil, OVI (Optical Variable Ink).

#### SINGLE TECHNOLOGY CONTACTLESS FEATURES

- iCLASS Seos with 8K processor card for standard applications or with extended 16K memory for demanding applications.
- Leverages SIO data model and security.

#### INTEROPERABILITY

- Fully supported by iCLASS SE® and multiCLASS SE® readers that can process SIO-enabled data formats. Only supported by iCLASS SE readers with firmware Revision E or later.



## SPECIFICATIONS

iCLASS® Seos™ 8K and iCLASS® Seos™ 16K	
<b>Base Part Number</b>	5005 for standard 16K card / 5006 for 8K 5015 for embeddable 16K card / 5106 for 8K
<b>Operating frequency</b>	13.56 MHz with ISO/IEC 14443 Type A
<b>Typical Maximum Read Range</b>	3-4" (depending the reader used)
<b>Dimensions</b>	2.127" x 3.375" x 0.033" max (5.40 x 8.57 x 0.084 cm)
<b>Construction</b>	Composite with 60% PVC / 40% PET
<b>Operating Temperature</b>	-40° to 158° F (-40° to 70° C)
<b>Weight</b>	0.20 oz (5.5g)
<b>Memory Size/ Application Areas</b>	iCLASS Seos 16K flexible memory allocation Or iCLASS Seos 8K secure processor
<b>Privacy Mode</b>	Privacy-preserving mode (with encryption of device identifiers)
<b>Secure Messaging</b>	EN 14890-1 and 7816 aligned using AES algorithm
<b>Mutual Authentication Mechanism</b>	Based on ISO/IEC 24727-3 2008 with NIST SP800-56A (for session key derivation)
<b>Write Endurance</b>	Min 500,000 cycles
<b>Data Retention</b>	Min 20 years
<b>HID Proximity</b>	No
<b>Contact Smart Chip Embeddable</b>	Yes
<b>Printable</b>	Yes (white/white card) Usable with direct imaging and thermal transfer printers (from HID but also from other suppliers) Exclusion areas for printing may apply in some areas of the card plastic
<b>Slot Punch</b>	Not available
<b>Secure Identity Services</b>	Customized cards are available through HID Identity on demand
<b>Visual Security Options</b>	Optional including hologram, anti-counterfeiting, holographic foil
<b>Additional Security Options</b>	Corporate 1000, Secure Identity Object (SIO) programming with SE-Elite
<b>Warranty</b>	Lifetime, see complete warranty policy for details

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