

# CRESCENDO™



**ACCESS** secure.

“Crescendo™ smart cards allow me to cost-effectively and easily deploy a wide range of logical access solutions.”



**Crescendo offers the lowest total cost of ownership (TCO) for a combined logical and physical access control solution.**

- ▶ Reduces card management costs and increases user convenience by combining logical and physical access control in a single card.
- ▶ Provides out-of-the-box, standards-compliant support for thousands of logical access applications provided by Microsoft® and others.
- ▶ Is supplied pre-initialized with the required on-card software and includes all required drivers and middleware.
- ▶ Requires no per-seat middleware licenses, reducing overall costs.
- ▶ Uses a powerful contact smart chip with cryptographic co-processor coupled with HID's industry standard proximity or iCLASS® technology<sup>6</sup>.
- ▶ Is available off-the-shelf, reducing lead times and cost.

CRES-CENDO

**Crescendo is a series of highly secure, off-the-shelf smart cards** designed to provide out-of-the-box, standards-compliant support for thousands of logical access applications.

By incorporating HID's industry standard proximity technology (i.e., HID, Indala®), iCLASS®, and other 13.56 MHz technologies, Crescendo is a single card that can be easily deployed for both logical and physical access control applications!

**Within HID's Trusted Identity Platform,™** Crescendo combines technologies, services, and know-how with unique attributes to deliver a trusted solution for secure identity-related applications.

**Crescendo is a multi-technology smart card.** Crescendo is a credit card-sized card that enables logical and physical access control, also serving as an employee ID badge.

An embedded contact smart chip is used for logical access control. To meet the needs of current physical access control customers, Crescendo can be customized with the “physical access control” technologies you choose.

**Crescendo smart cards are available off-the-shelf.** Cost and lead times are reduced with off-the-shelf cards.

**Crescendo is Windows® compatible.**

Crescendo series smart cards are fully compatible with the Microsoft® Windows® Smart Card Framework (WSF) and support Microsoft® applications such as Windows® Domain Log-On, VPN, Outlook®, secure Web access, and wireless LAN authentication.

A wide variety of security applications from other vendors are also supported including:

- ▶ Single sign-on
- ▶ Pre-boot authentication
- ▶ Disk encryption
- ▶ Digital signatures

**Crescendo is also supported by the Microsoft® Identity Lifecycle Manager 2007,**

dramatically simplifying the deployment, management, and auditing of smart cards used for logical access control applications. To learn more about ILM 2007, visit our website at [hidcorp.com/crescendo](http://hidcorp.com/crescendo).

**Crescendo smart cards require no additional per-seat middleware license.** Using a powerful contact smart chip with cryptographic co-processor, Crescendo is supplied pre-initialized with the required on-card software and includes all required drivers and middleware. This equates to a high performance, cost-effective solution.

**Choosing a smart card for logical access has never been easier or more economical!** Crescendo highly secure, off-the-shelf smart cards provide out-of-the-box, standards-compliant support for thousands of logical access applications. By incorporating HID's industry standard proximity and iCLASS® or MIFARE® technologies, Crescendo is a single card that can be easily deployed for both logical and physical access control use.



### Choose which Crescendo series smart card best meets your needs.

	C200	C700
<b>OS Support</b>		
Windows Vista™	Yes	Yes
Windows®XP	Yes	Yes
Windows®2000, 98SE, ME	No	Yes <sup>1</sup>
Windows® CE / Mobile	No	Yes <sup>1</sup>
Mac® OS X, Linux®, Solaris, Unix	No	Yes <sup>1</sup>

	C200	C700
<b>Standards Support</b>		
ISO 7816 1-4	Yes	Yes
PCSC / CCID	Yes	Yes
CryptoAPI	Yes	Yes
PKCS11	No	Yes
Base CSP	Yes	No
X.509 v3, PKCS 12, PFX, DER	Yes	Yes

	C200	C700
<b>Contact Smart Chip</b>		
Java® Card OS v2.2.1	Yes	Yes
Open Platform 2.1.1	Yes	Yes
Crypto Co-Processor	Yes	Yes
Number of 1024 Bit Digital Certificates <sup>2</sup>	16	21
Number of 2048 Bit Digital Certificates <sup>2</sup>	12	15
EEPROM Storage	72K	72K
EEPROM Data Retention	20 Years	20 Years

	C200	C700
<b>Contactless Technologies<sup>3</sup></b>		
iCLASS® Prox <sup>4</sup>	Yes	Yes
iCLASS® Prox <sup>4</sup> with Magnetic Stripe <sup>5</sup>	Yes	Yes
MIFARE®	Yes	Yes
Other Contactless and Multi-Technology Card Options Available on Request <sup>6</sup>	Yes	Yes

	C200	C700
<b>Microsoft® Applications</b>		
Windows® Domain Log-On	Yes	Yes
Remote Desktop / RDP	Yes <sup>7</sup>	Yes <sup>7</sup>
Microsoft® Identity Lifecycle Manager 2007	Yes	Yes
Outlook	Yes	Yes
Encrypted File System	Yes	Yes
Internet Explorer	Yes	Yes
Windows® Certificate Authority	Yes	Yes

	C200	C700
<b>Other Applications</b>		
Single Sign-On <sup>8</sup>	Yes <sup>9</sup>	Yes
Pre-Boot Authentication <sup>10</sup>	No	Yes
Firefox®, Netscape®	No	Yes
VPN (SSL / IPSEC) <sup>11</sup>	Yes	Yes
Match-on-Card Fingerprint	No	Yes <sup>1</sup>
Citrix™	Yes	Yes
Smart Card Management Utility	No	Yes

Microsoft®  
**Identity Lifecycle Manager 2007**

<sup>1</sup> May require an additional software license.

<sup>2</sup> Maximum number of certificates.

<sup>3</sup> All contactless technology cards include a contact smart chip with specifications per those shown under the "Contact Smart Chip" heading in this chart. The three cards shown are available off-the-shelf.

<sup>4</sup> The iCLASS® portion of the card is a 16K bit (2K Bytes) contactless smart chip with either 2 or 16 application areas.

<sup>5</sup> The magnetic stripe is ABA standard 3 track, high coercivity (4000 Oe), ISO 7811-6 compliant. Custom magnetic stripes are available; consult factory.

<sup>6</sup> Consult factory for other contactless card types and multi-technology card types that are available by custom order.

<sup>7</sup> Requires Windows Vista™ or Windows®XP.

<sup>8</sup> Including ActivIdentity® SecureLogin SSO, Bioscrypt VeriSoft Access Manager™ CA eTrust® SSO, IBM Tivoli® Access Manager, Open Domain Sphinx, Oracle® Enterprise Single Sign-On, Passlogix v-GO®, RSA® Sign-On Manager, and Softex OmniPass.

<sup>9</sup> Authentication only; no data storage on card.

<sup>10</sup> Including SafeBoot® WinMagic SecurDoc™ and Utimaco®

<sup>11</sup> Including Microsoft®, NCP, Cisco Systems®, Check Point®, and SafeNet, Inc.



# Crescendo™ Secure Custom Card Solutions

## Add Value to Your Crescendo Smart Cards!

Add value to your Crescendo smart cards by having HID's ID Service Bureau personalize each card with your corporate image and required ID badge information. For greater security, economically add custom anti-counterfeiting features. Only HID can provide one-stop shopping for your complete card customization needs!

### Use Crescendo Cards to Enhance Corporate Identity and Brand Recognition

No one wants to wear or present a plain, boring, unattractive badge. This card represents the user's personal image as well as the corporate image. Incorporate visual features such as a photo ID, name, or department color code to visibly identify individuals. High resolution printing and special inks are all available for your card design. A well-designed card demonstrates your company's commitment to security.

### Use Anti-Counterfeiting Features on the Outside of Your Crescendo Smart Cards

Enhance the security on the outside of your card. Holograms have been required by MasterCard® and Visa® for years. Passports, immigration cards, and currency also use holograms and other anti-counterfeiting features. Anti-counterfeiting options include:

**Holograms:** Holograms are easily recognizable by security personnel, allowing for quick visual identification of counterfeit cards.

**Ultra-Violet (UV) Fluorescent Inks:** Invisible to the naked eye, these inks can verify the authenticity of a card when placed under an ultra-violet light.

**Micro-Fine Printing**

**Ghost Image Overprints Holograms**

### Use HID's ID Badge Service Bureau to Create Your New Badges

Economically create new badges that incorporate the technologies you need with the graphics and anti-counterfeiting features you choose.



HID's ID Badge Service:

- ▶ Can create your ID badge layout; no in-house graphics capabilities or equipment is required.
- ▶ Can use an existing photo ID database to create new, personalized ID badges.
- ▶ Eliminates costs associated with cards destroyed or disfigured during the badging process.
- ▶ Reduces overall costs associated with ID badge production. Wear and tear on in-house badge production equipment is minimized.
- ▶ Enables the security department to manage security, not ID badge production.

**There are reasons for these security features. The same reasons apply to your ID program.**



MICROFINE PRINTING

UV FLUORESCING INKS

# Crescendo™ Smart Card Reader

## Features and Specifications

- ▶ **Optimized** for use with Crescendo series smart cards.
- ▶ **Sets a market performance standard** by supporting reader-to-card data transmission rates of up to 420 KBits per second.
- ▶ **Supports standard CCID<sup>1</sup> driver** for easy installation (plug and play).
- ▶ **Specially designed robust housing** for horizontal or vertical placement, adhesion to a PC monitor or desk, etc.
- ▶ **Offers a long life** (100,000 insertions) backed by a two-year warranty.



### Host Interface

USB 2.0 ( also compliant with USB 1.1 )

CCID<sup>1</sup>

Power Supply: Bus Powered

### Smart Card Interface

Compliant with ISO 7816

Card Size: ID-1 ( Full Size )

High Performance Smart Card Interface  
( up to 420 Kbps )

Smart Card Clock Frequency ( up to 8 MHz )

Supplies 60 mA Current to Power the Smart Card

Smart Card Movement Detection with Auto Power-Off

Short Circuit and Thermal Protection

### Compliance

Microsoft<sup>®</sup> WHQL<sup>2</sup> Certified

ISO 7816

USB 2.0 ( also compliant with USB 1.1 )

### API

PC/SC Driver

### PC/SC Driver Support

Windows Vista™

Windows<sup>®</sup> XP

Windows<sup>®</sup> 2000

Windows<sup>®</sup> ME

Windows<sup>®</sup> 98

Windows<sup>®</sup> CE 3.0 / CE.NET ( depending on hardware )

Windows<sup>®</sup> NT 4.0

Linux<sup>®</sup>

Mac<sup>®</sup> OS X

### Hardware Specifications

Color: Two-Tone Gray ( Standard )

Dimensions: 3.15" x 2.64" x 1.1"  
( 80 mm x 67 mm x 28 mm )

Weight (Includes Standard Base): 6.6 ounces  
( 187 grams )

Operating Temperature: 32° – 131° F ( 10° – 55° C )

Operating Humidity: 10%-90% rH

Composition: ABS

Connector Cable: 70.9" (180 cm)

Durability: 100,000 Insertions

Meantime Between Failure ( MTBF ): 500,000 Hours

### Other Features

Status Indicator: Dual Color LED

Light Vertical Base and Attachment Pad for Mounting  
the Reader ( i.e., on a Monitor )

### Safety and Environmental Standards

CE

FCC

UL

### Options:

Heavy Base ( 10.581 ounces / 300 grams ) or  
Jumbo Base ( 15.131 ounces / 429 grams )

Supporting Both Horizontal and Vertical  
Card Insertion

Customer-Specific Logos and/or Label on Request

Note: Should you require a PCMCIA or ExpressCard smart card reader, please inquire. HID can assist.

Reader As Shown: Part Number R31210121

<sup>1</sup> Chip Card Interface Device <sup>2</sup> Windows<sup>®</sup> Hardware Quality Labs

# Logical Access Implementation Made Simple

**Crescendo™**  
is a single card that  
can be easily deployed  
for logical and physical  
access control and other  
secure identity-related  
applications.



- 1 Start with a base card.
- 2 Add graphics, a photo ID, and an anti-counterfeiting element.
- 3 Issue highly secure custom cards for logical and physical access control.

**Request a  
Crescendo  
Evaluation Kit.**



**To learn  
more, visit  
[hidcorp.com/crescendo](http://hidcorp.com/crescendo).**



- 4 Use your Crescendo card for other applications:
  - ▶ Biometrics
  - ▶ Time and Attendance
  - ▶ Cashless Payment / Point-of-Sale
  - ▶ Handheld / Mobile Verification
  - ▶ Manufacturing Control
  - ▶ Many Others

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**ACCESS** experience.

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