



- **Versatile** – Supports converged logical and physical access control for corporate and government customers.
- **Interoperable solution for logical access** – Standards-based solution with two-factor authentication for user login and data protection during transmission between trusted parties (user personal data, emails, document signing and/or encryption).
- **Flexible** – Multi-technology enabled for physical access deployment and supports HID Prox, Indala, iCLASS®, MIFARE® and DESFire EV1.
- **Convenient and cost effective** – Multi-application smart card can be managed by HID’s ActivID™ Card Management System (CMS) for card issuance and life cycle.
- **High security** – Supports Secure Identity Object™ (SIO) for multi-layered security beyond the device technology, providing added protection for identity data.

**Crescendo® C1100 Benefits**

- Optimal combination for security and convenience (can accommodate variety of customer requirements for converged smart card solution)
- High capacity and performance smart card to support credentials for the most demanding applications (PKI digital certificates-based operations, Single Sign On [SSO], Boot Disk and Disk Encryption, data encryption and signing, etc.)
- For physical access control: Supports HID’s Elite Program that extends iCLASS® and MIFARE® security by providing unique keys for each application
- Versatile solution: Compatible with HID’s ActivID™ Card Management System, ActivClient® and 4TRESS
- Available in small quantities (pack of 25 cards with single or multi-technology combinations for physical access control)

Crescendo is a family of credit card sized smart cards designed to provide versatile and secure logical and physical access control. Crescendo leverages its state-of-the-art smart card platform technology to deliver a standard-based solution for strong authentication and data protection. Crescendo smart cards also address evolving market needs by offering superior performance and security; it also utilizes industry-accepted standards for card provisioning and usage.

**Single Device for Identity Assurance**

The Crescendo C1100 smart card provides end-users with a single smart card for accessing logical and physical resources, eliminating the need for them to carry multiple credentials or remember multiple passwords or PINs. For logical access, the card can be used for secure login to workstations and laptops, user login to web-based application and portals protected by industry standard Web Access Manager products (from IBM Tivoli Access Manager, CA, Novell and Oracle). The card supports strong authentication for VPNs access as an alternative to one time password (OTP) tokens, or cloud based applications when deployed with

HID’s ActivIdentity® 4TRESS appliance. In addition, the card can also be used to protect critical data during transmission between trusted parties or for data at-rest (e.g., encrypt individual hard drives or storing encryption keys off the hard drive).

Crescendo C1100 includes an embedded contact smart card chip with a high output cryptographic co-processor. To meet the needs of physical access control customers, Crescendo C1100 can also be ordered with RFID technology (with single or multi-technology options).

**Digital Identity Assurance Applet**

The C1100 supports HID Global’s ActivIdentity Applet Framework or any third-party applet for JavaCard-based smart cards. ActivIdentity Framework is a portfolio of smart card, module-based identity and security software applications that delivers secure storage and protection for passwords, digital identity credentials, cryptographic functions, personal information and network access. The industry-proven Applets are the most complete and widely used portable securitybased applications available for organizations building multi-function smart card solutions.

**TECHNOLOGY FEATURES**

- Available as contact-only and/or hybrid cards (contact and contactless).
- Supports ISO/IEC standards: 7810, 7816 for contact and contactless cards (14443 A/B and 15693).
- Supports contactless smart cards with up to 848 Kbps in the fastest ISO 14443 transmission mode.
- Smart card chip integrating co-processor with high performance for cryptographic calculations with symmetric and asymmetric keys.
- Card body construction: Compatible with direct Image or thermal transfer printers.
- Support customization (magnetic stripe, custom artwork text or graphics: Requires minimum volume quantity).
- Optimized platform design with automatic memory defragmentation and secure memory management.

**SECURITY FEATURES**

- Common Criteria EAL 5+ certified smart card chip.
- SINGLE OR MULTI-TECHNOLOGY CONTACTLESS SUPPORT**
- HID: iCLASS® 32k (4 KB with 16k/16+16k/1) as well as iCLASS with HID Prox®.
  - NXP MIFARE® CLASSIC 4K or DESFire® EV1 8K with and without HID Prox.
  - As an option, the card can also be made available with other technologies such as NXP Hitag, Legic and combinations thereof.
  - Programmable with SIO for increased security as well as SE-Elite.



**SPECIFICATIONS**

<b>HID/ActivIdentity Product Compatibility</b>	ActivID Card Management System 4.2 SP2 and later version ActivClient 6.2
<b>Environment</b>	Support JavaCard 2.2.2 and Global 2.1.1 specifications
<b>Cryptographic Capabilities</b>	AES, RSA, ECC, DES and Triple DES
<b>Smart Card Readers</b>	Compatible with PC/SC Compliant reader
<b>Baud Rate</b>	230,400 bauds at 3.57 MHz for contact mode. 106-848 kbps (depending the contactless technology)
<b>Card Construction</b>	Thin, flexible Composite PVC/PET
<b>Dimensions</b>	2.127" x 3.375" x 0.033" max (5.40 x 8.57 x 0.084 cm)
<b>EEPROM Memory</b>	80K Bytes
<b>EEPROM Endurance</b>	500,000 cycles
<b>EEPROM Retention</b>	20 years at +77° F (+25° C)
<b>Operating Temperature Range</b>	-13° to +185° F (-25° to +85° C)
<b>Compliance and Standards</b>	For US Government: FIPS 201 compatible with NIST CIV Note: This card is not compatible with ActivID CMS Appliance.
<b>Support in existing Operating Systems</b>	Windows®, Solaris™, Macintosh® and Linux® environments
<b>Supported Applications</b>	Single Sign On, pre-boot/disk encryption software, VPN
<b>Security Countermeasures</b>	Clock frequency, temperature, supply voltage and light sensors. Also includes Single Fault Injection (SFI) attack detection as well as protection against SPA/DPA, timing and fault attacks (DFA)
<b>Warranty</b>	5 year warranty

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