Embeddable

Multi-technology Contactless Smart Cards for use with Contact Smart Chip Modules
Base Model Numbers: 2010, 2011, and 2012

Application:

HID's *iCLASS* 13.56 MHz Embeddable read/write contactless smart card technology can be used for diverse applications such as access control, biometrics, cashless vending, public transportation, airline ticketing and customer loyalty programs. Multiple, securely separated files enable numerous applications and support future growth.

The *iCLASS* Embeddable Card includes *iCLASS* 13.56 MHz contactless read/write smart card technology with the ability to add an embedded smart chip of your choice along with adding a magnetic stripe, barcode, and anti-counterfeiting features including custom artwork or a photo identification directly on the credential. Your *iCLASS* Embeddable Card can now be utilized for such diverse applications including access control, network log-on security, automotive vehicle identification, cashless vending, time and attendance, and biometric verification. You can now take full advantage of *iCLASS* access control capabilities with the myriad of smart chip software applications. The *iCLASS* Embeddable Card meets strict ISO thickness standards for use with direct image and thermal transfer printers.

Features:

- 13.56 MHz read/write contactless smart card technology provides high-speed, reliable communications with high data integrity.
- *iCLASS* technology ensures high security with mutual authentication, encrypted data transfer, and 64-bit diversified keys for read/write capabilities.
- Any existing HID format can be factory or field programmed into the secure HID access control application area.
- Available in 2K bit (256 Bytes) or 16K bit (2K Bytes) configurations
- Designed to be embedded with a contact smart chip module of your choice.
- A single multi-technology card can be used for multiple applications.
- Add a magnetic stripe, barcode, anti-counterfeiting, or photo ID.

All 2K bit (256 Bytes) *iCLASS* credentials have the following features:

- Available in two application area configuration only.
- Provides the HID standard access control application area and one other application area for user customization.
- Meet ISO 15693 standard for contactless communications.
- Provides a cost effective way to improve the security of your access control installation.

All 16K bit (2K Bytes) *iCLASS* credentials have the following features:

- Sufficient read/write memory to store multiple biometric templates.
- Available in a two or sixteen application area configuration.
- Multiple securely separated files enable numerous applications, including the HID standard access control application, and support future growth.
- Meet ISO 15693 and 14443B2 for contactless communications.

iCLASS® by

Smart • Powerful • Trusted

HID®

Features

Read/write Functionality for Multi-functional Memory Applications
iCLASS was specifically designed to make access control more powerful, more versatile, and more secure. All radio frequency data transmission between the card and reader is encrypted using a secure algorithm. By using industry standard encryption techniques, *iCLASS* reduces the risk of compromised data or duplicated cards. For even higher security, the card data may also be protected with DES or triple DES encryption. Multiple securely separated application areas are each protected by 64 bit diversified read/write keys which allow complex applications and provide for future expansion.

Security mechanisms such as mutual authentication and encryption are efficiently combined with fast processing and data communication, resulting in transaction times of less than 100 milliseconds for a typical secure e-purse transaction.

Proven, Reliable Technology
Offers extremely consistent read range. Unaffected by body shielding or variable environmental conditions.

Thin
Can be carried with credit cards in a wallet or purse. Use with a strap and clip as a photo ID badge.

Photo ID Compatible
Print directly to the card with a direct image or thermal transfer printer. Slot punch vertically for easy use.

Long Life
Passive, no-battery design allows for an estimated minimum 100,000 reads.

Durability
Strong, flexible, and resistant to cracking and breaking.

Options:
- Magnetic stripe
- External card numbering (inkjet or laser engraving)
- Vertical slot punch
- Custom artwork (text or graphics). Note: custom graphics may increase overall card thickness.
- Contact Smart Chip Module. The Embeddable *iCLASS* card can be purchased:
  - Ready to be embedded with the contact smart chip module of your choice.
  - With the contact smart chip module already embedded.

Note: optional contact smart chip module memory requirement is dependent on operating system and application chosen. Contact your HID representative for information about the modules that match your application.
(Please see "How To Order Guide" for a description of the options and associated part numbers.)

Warranty
Lifetime warranty. See complete warranty policy for details.

Base Part Numbers
- 2010 for 2K bit (256 Bytes) card with 2 application areas
- 2011 for 16K bit (2K Bytes) card with 2 application areas
- 2012 for 16K bit (2K Bytes) card with 16 application areas

Description
13.56 MHz contactless smart card with optional contact smart chip module.

Specifications:

Typical maximum range*
R10 2-3"
R30/RW300 2.0-3.5"
R40/RW400 2.5-4.5"
RK40/RWK400 1.0" - 3.0-4.0"
*Dependent upon installation conditions.

Dimensions
2.127" x 3.375" x 0.033" max. (5.40 x 8.57 x 0.084 cm)

Weight
0.20 oz. (5.7g)

Card Construction
Thin, flexible polyvinyl chloride (PVC) laminate.

Operating Temperature
-40° to 158° F (-40° to 70° C)

Operating Humidity
5-95% non-condensing

Operating Frequency
13.56 MHz

RF Interface
As suggested by ISO/IEC:
15693 read/write
14443B read/write (16K only)

Transaction Time
<100 ms typical

Baud Rate
14443 B2 mode - 212 Kbps
1444B mode-106 Kbps
15693 read/write - 26 Kbps

Memory Type
EEPROM, read/write

Multi-application Memory
2K bit (256 Bytes) card – 2 application areas
16K bit (2K Bytes) card– 2 or 16 application areas

Write Endurance
Min. 100,000 cycles

Data Retention
10 years

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