FlexSmart® Series Credentials
MIFARE® Cards • 1430, 1436, 1440, 1446

▶ **High Security -** Mutual authentication, data encryption and unique 32-bit serial number.

▶ **Read/Write Functionality -** Ideal for e-Purse functions.

▶ **True Credit Card Thickness -** Use with all direct image and thermal transfer printers.

HID

ACCESS interoperability.

HID's FlexSmart MIFARE offerings encompass the industry's broadest range of open standard contactless smart card products. HID MIFARE is a credit card-sized credential ideal for diverse applications such as access control, cashless vending, public transportation, corporate and campus applications, event ticketing, customer loyalty and photo ID cards.

Manufactured to the highest quality standards, HID MIFARE credentials have the memory structure and capacity to store multiple applications on a single credential. Securely separated sectors, each protected by a set of two keys and programmable access conditions, allow complex applications and provide for future expansion. The data on the card is protected with encryption keys used in the mutual authentication process. Therefore, no important data will be shared until the card and reader have been authenticated to each other.

When security and performance count most, HID's FlexSmart MIFARE cards can be produced with visual security and anti-counterfeiting features such as holograms, ultra-violet fluorescent inks, micro-printing or a custom logo to quickly and easily identify genuine cards.

Key Features
▶ **Proven, Reliable Technology -** Offers extremely consistent read range. Use is unaffected by body shielding or variable environmental conditions, even when close to keys and coins.
▶ **Fast Processing and Data Communication -** Transaction times are less than 100 milliseconds for a typical secure ticketing transaction.
▶ **Multiple Memory Types -** Available in MIFARE 1K and 4K.

Long Life — Passive, no-battery design allows for an infinite number of reads.

Durability — Strong, flexible and resistant to damage.

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

PVC Card Surface — Card is optimized for dye sublimation printing.

Customizable — Specify your own text or graphics artwork.

Thin — 0.030" (0.076 cm) card can be carried with credit cards in a wallet or purse. Use with a strap and clip as a photo ID badge.

Many Ordering Options
Including magnetic stripe, external card numbering, vertical slot punch, custom artwork, and contact smart chip module.

Memory Specification
1K Byte (8,192 bits) or 4K Bytes (32,768 bits)
Memory Sector 0 is used as the MIFARE® Application Directory (MAD)
- Unique 4 Byte (32 bit) ID per card (CSN)
- Each sector uses two encryption keys
  - Key "A" to read only
  - Key "B" to read/write
- Each encryption key is 6 Bytes (48 bits)

Dimensions	2.125" x 3.375" x .03" (5.4 x 8.57 x 0.076 cm)
Weight	0.20 oz. (6 g)
Typical Maximum Read Range*	Up to 4" (10 cm)
Operating Temperature	Model 1430, 1440 PVC Cards: -40 to 122°F (-40 to 50°C) Model 1436, 1446 Composite Cards: -40 to 158°F (-40 to 70°C)
Operating Humidity	5%-95% Non-condensing
Operating Frequency	13.56 MHz
RF Interface	ISO 14443 A, Parts 1-3
Transaction Time	< 100 ms
Baud Rate	106 kbps
Memory Type	EEPROM, 1Kbyte (8,192 bits) or 4 Kbytes (32,768 bits)
Multi-Application Memory	MIFARE 1K: memory arranged in 16 64-byte Sectors MIFARE 4K: memory arranged in 40 Sectors: 32 sectors of 64 bytes, 8 sectors of 256 bytes
Write Endurance	100,000 cycles min.
Data Retention	10 years min.
Material and Finish	Gloss white/white PVC or PVC/Polyester Composite
Card Marking	Inkjet Standard, Laser Engraving optional
Custom Graphics	Optional
Slot Punch	Vertical slot punch optional
Programming	Factory or Field Programmable
Part Number	Model 1430 PVC MIFARE 1K Card Model 1440 PVC MIFARE 4K Card Model 1436 Composite PET/PVC MIFARE 1K Card Model 1446 Composite PET/PVC MIFARE 4K Card
Description	MIFARE Card, ISO Thick, Photo Imageable
Warranty	Lifetime - see Sales Policy for complete details

*Dependent on local installation conditions.

ACCESS experience.

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