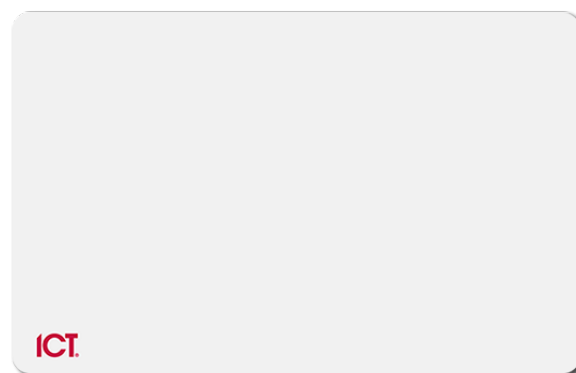# ICT ISO Graphic Printable Card

The ISO Graphic Printable Card provides a complete multi-technology smart card RFID solution. Available with either 125kHz or 13.56MHz technology, or as a multi technology card combining both capabilities, delivering maximum compatibility while providing a path forward to the latest technology. Generic Wiegand output provides flexibility and seamless integration with any access control solution.

Feature Highlights

> Utilizes highly secure 13.56MHz MIFARE DESFire EV3 smart card technology

> Mutual authentication, AES 128, DES and triple-DES data encryption with unique 56-bit serial number

> Improve security of existing 125kHz applications with dual technology transition cards

> Open solution with read / write functionality

> ISO standard card thickness enabling use with all direct image and thermal transfer printers

> Range of options including magnetic stripe, external card numbering, custom artwork, and contact smart chip module

Convenient

The thin design allows the card to be carried with credit cards in a wallet or purse. Use with a badge holder and strap clip or lanyard for an attractive photo ID badge.

Long Life and Durability

ISO cards are strong, flexible and resistant to damage. A passive, no battery design ensures a long life with an infinite number of reads.

Graphic Printable

The PVC card surface is optimized for dye sublimation printing, allowing you to customize cards with your own text or graphics artwork.

Photo ID Compatible

Print photo ID directly to the card with a direct image or thermal transfer printer.

Flexible Options

A range of ordering options for true flexibility, including:

> Custom artwork (text or graphics)
> External card numbering (laser engraving)
> Magnetic stripe
> Contact smart chip module

Ideal Migration Solution

Migration from legacy and less secure low frequency 125kHz technology can be easily achieved using dual technology DESFire cards that incorporate both high and low frequency card inlays. This allows organizations to transition to smart readers at their own pace.

Support for a number of low frequency products is available.

MIFARE DESFire EV3

The latest addition to the MIFARE DESFire product family, MIFARE DESFire EV3 offers even more advanced hardware and software implementation on a brand new internal chip, and combines enhanced performance with a greater operating distance and improved transaction speed compared to its predecessors.

Based on global open standards for both air interface and cryptographic methods, it uses the same security certification level as IC products used for banking cards and electronic passports. Featuring an on-chip backup management system and mutual three-pass authentication, EV3 supports confidential and integrity-protected communication with secure dynamic messaging and mirroring.

> Fully compliant with the international standard ISO/IEC 14443 Type A 1-4 and ISO/IEC 7816-4

> Common Criteria EAL5+ security certified for IC hardware and software

> NFC Forum Tag Type 4 certified

> Secure, high speed command set

> Unique 7-byte serial number

> Choice of open DES/2K3DES/3K3DES/AES crypto algorithms

> Open AES 128 bit crypto algorithm in hardware

> Fully interoperable with existing NFC reader infrastructure

> Transaction timer mitigates risk of man-in-the-middle attacks

> Backwards compatible with all previous MIFARE DESFire generations

ICT Secured MIFARE

ICT Secured MIFARE is ICT's implementation of the MIFARE standard. Credential data is protected with a diversified authentication key and encrypted with an AES 256 algorithm, effectively plugging the known security flaw in the MIFARE standard.

Other MIFARE formats are also available.

125kHz Technology

125kHz technology offers a lower level of security but a good read range and short read time due to the lower power requirement and the small amount of data being transmitted. This allows users to simply present, swipe or wave their card in the general direction of the reader to achieve a successful read.

Technical Specifications

MIFARE DESFire Cards	MIFARE DESFire EV3	MIFARE DESFire EV3 / 125kHz	MIFARE DESFire EV3 / 125kHz HID
Ordering Code	PRX-ISO-DF-EV3-2K PRX-ISO-DF-EV3-4K PRX-ISO-DF-EV3-8K	PRX-ISO-DF-EV3-2K-LF	PRX-ISO-DF-EV3-HID26 PRX-ISO-DF-EV3-HID34
Technology			
MIFARE DESFire	✓	✓	✓
MIFARE	✗	✗	✗
125kHz	✗	✓	✓
Operating Frequency			
13.56MHz	✓	✓	✓
125kHz	✗	✓	✓
EEPROM Memory			
Memory	2KB / 4KB / 8KB	2KB	2KB
Number of Applications*	Unlimited	Unlimited	Unlimited
Files per Application*	32	32	32
Write Endurance	1,000,000	500,000	500,000

* The number of applications and files within the applications is dependent on the device memory available.

Communications			
RF Interface	ISO/IEC 14443A-4	ISO/IEC 14443A-4	ISO/IEC 14443A-4
Baud Rate	848 kbit/s	848 kbit/s	848 kbit/s
Typical Maximum Read Range**	15mm (0.6")	15mm (0.6")	15mm (0.6")

** Read range is dependent upon reader technology and installation conditions and may vary accordingly.

Common Criteria Certification			
Compliance	EAL5+	EAL5+	EAL5+
Features			
Card Construction	Thin, flexible white high gloss polyvinyl chloride (PVC) laminate		
Card Marking	Laser engraving (optional)		
Programming	Factory or field		
Dimensions			
Dimensions	85.7 x 54.0 x 0.76 mm (3.375 x 2.125 x 0.3")		
Net Weight	5.5g (0.2oz)		
Gross Weight	1200g (42.3oz)	Qty: 200	
Operating Conditions			
Operating Temperature	-40˚ to 50˚C (-40˚ to 122˚F)		
Operating Humidity	5%-95% Non-condensing		

MIFARE and 125kHz Cards	MIFARE	MIFARE / 125kHz HID	125kHz
Ordering Code	PRX-ISO-MF PRX-ISO-MF4K	PRX-ISO-MF-HID PRX-ISO-MF4K-HID	PRX-ISO-LF
Technology			
MIFARE DESFire	✖	✖	✖
MIFARE	✔	✔	✖
125kHz	✖	✔	✔
Operating Frequency			
13.56MHz	✔	✔	✖
125kHz	✖	✔	✔
EEPROM Memory			
Memory	1KB / 4KB	1KB / 4KB	363 Bits
Number of Applications*	N/A	N/A	N/A
Number of Sectors	16 (1KB) / 40 (4KB)	16 (1KB) / 40 (4KB)	N/A
Write Endurance	200,000	200,000	100,000

The number of applications and files within the applications is dependent on the device memory available.

Communications			
RF Interface	ISO/IEC 14443A-3	ISO/IEC 14443A-3	ISO/IEC 11784/11785
Baud Rate	106 kbit/s	106 kbit/s	106 kbit/s
Typical Maximum Read Range**	60mm (2.36")	60mm (2.36")	40mm (1.57")

*** Read range is dependent upon reader technology and installation conditions and may vary accordingly.*

Common Criteria Certification			
Compliance	✖	✖	✖
Features			
Card Construction	Thin, flexible white high gloss polyvinyl chloride (PVC) laminate		
Card Marking	Laser engraving (optional)		
Programming	Factory or field		
Dimensions			
Dimensions	85.7 x 54.0 x 0.76 mm (3.375 x 2.125 x 0.3")		
Net Weight	5.5g (0.2oz)		
Gross Weight	1200g (42.3oz)		Qty: 200
Operating Conditions			
Operating Temperature	-40˚ to 50˚C (-40˚ to 122˚F)		
Operating Humidity	5%-95% Non-condensing		

Designers & manufacturers of integrated electronic access control, security and automation products.

Designed & manufactured by Integrated Control Technology Ltd.

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