MIFARE® DESFire® EV3 + Prox Card

Migrate to the most feature-rich implementation of DESFire EV3 available

HID Global's DESFire EV3 + Prox card is designed to enable security system owners with a smooth migration path from legacy low-frequency 125 kHz-based systems to a modern and secure credential technology.

Dual technology credentials maintain interoperability with legacy 125 kHz readers, meaning all readers do not immediately need to be upgraded when starting a migration. This means you can smooth out the implementation and cost of the upgrade over a timeframe that works best for your schedule and budget.

DESFire EV3 is the latest addition to the MIFARE DESFire family of smart card chipsets from NXP. This latest evolution introduces the option of even more features for implementation, and HID has taken full advantage.

Unlike many other DESFire solutions available on the market, HID's DESFire EV3 + Prox card leverages these security features including AES128 encryption, secure channel-based file transfer and proximity check to protect card data from attack.

PICK THE EV3 PROFILE THAT BEST MEETS YOUR NEEDS

Security – Adopt HID's most advanced security features with its Signo™ readers.

Compatibility – Maintain backwards compatibility with iCLASS SE® / multiCLASS® SE readers

Custom – Decide for yourself which features suit your solution best

KEY FEATURES

- **Feature-rich security –** Secure card data with the best implementation of the DESFire EV3 toolbox including AES128 encryption, secure channel-based file transfer and proximity check to protect against man-in-the-middle attacks
- **Added assurance –** Available with the portable Secure Identity Object™ (SIO®) data model for added key diversification, authentication signatures and encryption
- **Fully backwards compatible –** Ensure your investment in legacy DESFire credentials and readers is protected, DESFire EV3 credentials offer full backwards compatibility with EV1 and EV2 based solutions
- **Simplified, cost-effective migrations –** Support for read/write identification using 125 kHz contactless technology to enable migration from legacy 125 kHz credential technologies

ORDERING INFORMATION

For full details, refer to the Readers and Credentials How to Order Guide.

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PICK THE EV3 PROFILE THAT BEST MEETS YOUR NEEDS

- **High Security –** Adopt the latest and greatest security features with HID Signo™ readers
- **Compatibility –** Maintain backwards compatibility with iCLASS SE® / multiCLASS® SE readers
- **Custom –** Decide for yourself which features suit your solution best

	High Security Profile	Compatibility Profile[1]	Custom Profile
Base Part	812	811	810
Operating Frequency	13.56 MHz & 125kHz		
DESFire Communication Protocol Compliance	ISO14443A-4, up to 848kbps		
DESFire Memory Type & Applications	8K EEPROM, unlimited applications within memory constraint		
DESFire Access Conditions	Create Application Allowed[2]	Create Application Allowed[2]	User Defined[3]
DESFire SIO Data Object Support	Yes (enabled by default)	Yes (enabled by default)	Optional[3]
DESFire HID Format Support	Yes (wrapped in SIO)	Yes (wrapped in SIO)	Optional[2] or Unprogrammed
DESFire Data Retention	Minimum of 25 years		
DESFire Extended Privacy Support	Yes	No	Optional[2]
DESFire SIO Application Security Features	AES-128 crypto / Enhanced Secure Channel / Proximity Check	2TDEA crypto/MAC Communication	Choose from EV1, EV2 or EV3 NXP Specification[3]
DESFire SIO Application Key Diversification	Based on NIST 800-108 (CMAC/AES in Counter Mode)	Based on NIST SP800-108 (HMAC/SHA-1)	Optional[2]
DESFire UID	Random 4-byte UID	7-byte Static UID	7-byte Static / 4-byte Random UID
	DESFIRE COMPATIBILITY & PERFORMANCE[4]		
HID Signo Readers	SIO Read, EV3 Application Up to 9cm (3.54") (FW 10.0.2.2 or higher required)	SIO read, EV1 Application Up to 9 cm (3.54")	Custom Data[5] Up to 9 cm (3.54")
iCLASS SE / multiCLASS SE / pivCLASS Readers	Not Compatible	SIO Read, EV1 Application	Custom Data[6] Up to 8 cm (3.15")
CP1000D Desktop Encoder	Not Compatible	EV1 SIO Application	EV1 Application Custom Data Read / Write
HID Signo Biometric Reader 25B / iCLASS SE RB25F Fingerprint Reader	Not Compatible	Not compatible	Not compatible
OMNIKEY Readers Embedded SE Devices	Not Compatible	SIO Read, EV1 Application	DESFire Custom Data[7]
	125KHZ COMPATIBILITY & PERFORMANCE[4]		
HID Prox / Indala Readers	125kHz Up to 14cm (5.5") – model dependant		
multiCLASS SE Readers	Up to 4cm (1.6") – model dependant		
HID Signo Readers	Up to 5cm (2") – model dependant		
CP1000 Desktop Encoder	HID Prox Read / Write		
HID Signo Biometric Reader 25B / iCLASS SE RB25F Fingerprint Reader	Not Compatible		
OMNIKEY and Embedded SE Devices	Read only[7]		
	MECHANICAL, ENVIRONMENTAL AND COMPLIANCE		
Printing	HID recommends the use of a high-definition printer (HDP) for this card		
Card Construction	Composite construction (40% PVC, 60% PET)		
Weight	~ 0.2 oz (5.5g)		
Operating Temperature	-31° F to 122° F (-35 °C to + 50 °C)		
Min/Max Storage Temperature	-31° F / 122° F (-35 °C / + 50 °C) for 1000hrs		
Thermal Shock	-31° F to 176° F (-35 °C to + 80°C) 100 cycles (soaking time 5 min, transition time 30 s)		
Chemical Resistance	The card can withstand exposure to salt water (5%) salt mist, acetic acid water (5%), carbonated sodium water (5%), sugared water (10%), ethylene glycol (50%) for at least 24 hours		
Standards Compliance	ISO14443A-4, ISO/IEC 24727-3:2008, EN 14890-1:200		
Environmental Compliance	RoHS, China RoHS, REACH, Halogen Free		
Warranty	Lifetime Warranty		

1 Compatibility profile (811) includes the high security application supported by HID Signo firmware 10.0.2.2 or higher. SIO format data mirrors that of the EV1 compatible application.
2 The HID PICC master key is not published, if a custom PICC master key is required, please request a custom part number.
3 As defined within the custom specification. Ensure requested features are compatible with the target reader device, not all EV2/EV3 features are supported by HID custom profile readers.
4 HID Global testing occurs in open air. Some environmental conditions, including metallic mounting surface, can significantly degrade read range and performance; plastic or ferrite spacers are recommended to improve performance on metallic mounting surfaces. Spacers for iCLASS SE readers are available at hidglobal.com.
5 Requires a custom credential profile HID Signo reader.
6 Requires an iCLASS SE/multiCLASS SE with the custom programming option "W", EV1 features only.
7 Refer to Extended Access Technologies How to Order Guide for appropriate part number and compatibility, not all EV3 features are supported.

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