MIFARE® DESFire® EV3 Card

The most feature-rich implementation of DESFire EV3 available

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.

HID DESFire EV3 cards leverage security features including AES128 encryption, secure channel-based file transfer and proximity check to protect card data from attack. Furthermore, unlike many other DESFire solutions available on the market, Random UID has also been introduced to ensure the card will never openly share any information that could be associated with the user. Finally, EV3 credentials from HID offer layered security with the addition of a Secure Identity Object™ (SIO®) data model for added key diversification, authentication signatures and encryption.

HID's DESFire solutions offer choice with the highest standards in security and privacy features available out of the box. Bespoke applications are also supported and can be programmed in the field with the "Custom" profile option.

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
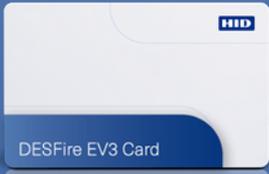
ORDERING INFORMATION

For full details, refer to the <u>Readers and Credentials How to Order Guide.</u>

HID

DATASHEET

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	High Security Profile	Compatibility Profile[1]	Custom Profile
Base Part	802	801	800
Operating Frequency	13.56 MHz		
Communication Protocol Compliance	ISO14443A-4		
Communication Speed	Up to 848kbps		
Memory Type	8K EEPROM		
Number of Applications	Unlimited (within memory constraints)		
Access Conditions	Create Application Allowed[2]	Create Application Allowed[2]	User Defined[3]
SIO Data Object Support	Yes (enabled by default)	Yes (enabled by default)	Optional[3]
HID Format Support	Yes (wrapped in SIO)	Yes (wrapped in SIO)	Optional[2] or Unprogrammed
Data Retention	Minimum of 25 years		
Extended Privacy Support	Yes	No	Optional[2]
SIO Application Security Features	AES-128 crypto / Enhanced Secure Channel / Proximity Check	2TDEA crypto / MAC Communication	N/A
SIO Application Key Diversification	Based on NIST SP800-108 (CMAC / AES in Counter Mode)	Based on NIST SP800-108 (HMAC/SHA-1)	N/A
UID	Random 4-byte UID	7-byte Static UID	7-byte Static or 4 Byte Random UID
	COMPATIBILITY & PERFORMANCE[4]		
HID Signo Readers	SIO Read, EV3 Application Up to 9 cm (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 Up to 8 cm (3.15")	Custom Data[6] Up to 8 cm (3.15")
CP1000D Desktop Encoder	Not Compatible	EV1 SIO Application SIO Read / Write	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	EV1 SIO Application SIO Read	Custom Data[7]
Printing	HID recommends the use of a high-definition printer (HDP) for this card		
	MECHANICAL, ENVIRONMENTAL AND COMPLIANCE		
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 (801) 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.