

# OMNIKEY® SECURE ELEMENT

## A seamless, simple extension for your security

Give users secure yet effortless access to everything throughout the building and beyond.

The OMNIKEY® Secure Element is HID's next generation secure element replacing the iCLASS® SE Processor, which has been used in a multitude of different devices in various industries as a key to the HID Ecosystem. So, the story of simple to use, high-end security will continue to the next level.

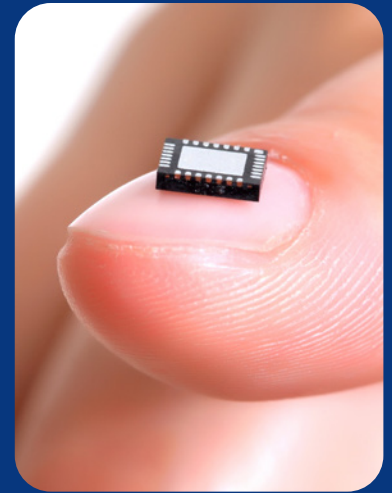


The OMNIKEY Secure Element enables OEM partners to become part of the HID Ecosystem. This single chip represents a tamperproof key to leverage all the advantages of Seos® and other technologies from HID, like iCLASS®. It can also be used for other card protocols like MIFARE DESFire®.

It enables reader manufacturers, developers and system integrators to quickly and easily integrate a Secure Identity Object (SIO) and allows them to make their devices secure endpoints.

Besides the enablement of the HID Ecosystem, the feature-rich OMNIKEY Secure Element can also be used for true random number generation, secure key storage and security enhanced encryption support.

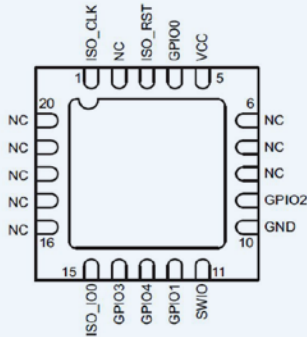
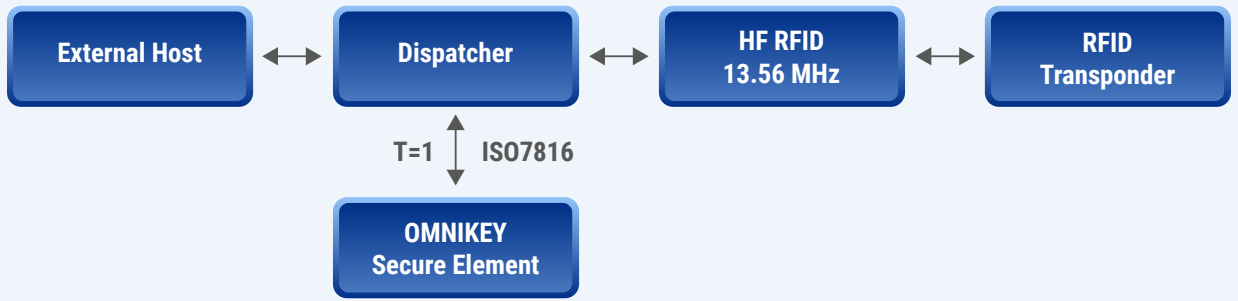
The OMNIKEY Secure Element enhances security with a device and technology-independent layer of additional security — on top of device-specific security — acting as a digital data wrapper for additional key diversification, authentication and encryption.



### KEY FEATURES:

- **Secure Identity Object (SIO):** Provides a secure, standards-based, technology-independent and flexible identity data structure based on a new open credential standard.
- **OMNIKEY Platform:** Provides multi-layer security that extends beyond the card technology for additional protection to identity data. Enables the use of NFC smartphones and other devices for mobile access utilizing iCLASS and Seos.
- **Faster Integration:** Developers Tool Kit (DTK) to provide resources that facilitate fast and easy integration and extends access to HID's broad developers community.
- **Field-Updatable Firmware:** Includes support for existing card technologies such as standard iCLASS and Seos. Firmware is field upgradeable to address evolving market requirements.
- **Low Power Consumption:** Power saving hibernate states.

## TECHNICAL SPECIFICATIONS



Pin	Description	Pin	Description	Pin	Description	Pin	Description
1	ISO_CLK	6	NC	11	DNC	16	NC
2	NC	7	NC	12	DNC	17	NC
3	ISO_RST	8	NC	13	DNC	18	NC
4	DNC	9	DNC	14	DNC	19	NC
5	VCC	10	GND	15	ISO_I00	20	NC

NC = No connect. DNC = Do not connect.

<b>BASED PART NUMBERS</b>	<b>SEL55100000</b>
<b>Form Factor</b>	Surface Mount Device Processor, 4mm X 4mm, VFQFN 20 Pin Package
<b>Interface Lines</b>	Clock, Data I/O, Controlled Power*, GND, RST
<b>Interface Standards</b>	ISO 7816-3 (T=1 & T=0)
<b>Symmetrical Cryptography</b>	3DES, AES (128, 192, 256)
<b>Asymmetrical Cryptography</b>	RSA up to 3072 bit, ECC up to 521 bit
<b>Memory</b>	32 bit RISC Processor, 2048 KB Flash, 50 KB RAM
<b>Timers</b>	Three 16 Bit Timers with interrupt capability
<b>Clock Rate</b>	1 – 8 MHz External Clock
<b>Supply Voltage</b>	Voltage classes A, B, & C (5V, 3V & respectively) supported
<b>Current Consumption Normal Operation</b>	25mA Maximum
<b>Standby Operation</b>	100uA (2.7V<Vcc<3.3V)
<b>Hibernate Operation</b>	1uA (1.62V<Vcc<1.98)
<b>Operating Temperature</b>	-25°C to +85°C
<b>Card Comptibilities</b>	Seos credentials (includes NFC devices utilising Seos) iCLASS SE credentials authentication and command set. Standard iCLASS SE credentials authentication and command set. Standard iCLASS credentials authentication and command set.
<b>Security Scheme</b>	Card independent and card agnostic security scheme, allowing the usage of SIOs on industry standard, open technology cards



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