



We are pleased to announce the addition of the Sentinel HL hardware based protection keys to our robust portfolio of products and services.

The Sentinel HL keys are offered in a new contemporary design while maintaining full backwards compatibility with your existing Sentinel HASP HL, Hardlock and Sentinel SuperPro implementations. Additionally, they allow you to take full advantage of forward compatibility with our next generation software licensing solution – Sentinel LDK.

For over two decades, software publishers are putting their trust in SafeNet's hardware based protection keys in order to protect their valuable software against piracy. SafeNet's state-of-the-art technologies provide full-scale security and licensing solutions for software vendors wishing to address each and every aspect of the software monetization lifecycle – from copy and intellectual property (IP) protection to product catalog management and ongoing end-user experience improvement. Supported by a set of development and management tools, the Sentinel portfolio enables software vendors and developers to implement flexible licensing enforcement solutions that best meet their business needs and their customers' evolving demands.

For more information on SafeNet's Sentinel HL hardware based licensing solutions, visit:

http://www.safenet-inc.com/SentinelHL

# Features and benefits at a glance:

- Backwards compatibility 100% compatible with your existing Sentinel HASP HL, Hardlock and Sentinel SuperPro hardware.
- Increased Security All Sentinel HL hardware-based protection keys employ a highly secure SmartCard chip providing the utmost security against malicious hardware attacks such Differential Power Analysis (DPA) and electron microscopy.
- Highly Customizable Provides more real estate for the purpose of a personalized logo or text.
- Future proof add future functionality and enhancements to in-the-field deployed keys using our unique UpdateOnChip™ mechanism.
- AppOnChip Execute code segments onboard the key providing a virtually inseparable binding between the key and your application
- **Driverless** Sentinel HL keys are field upgradeable from Sentinel HASP HL, Hardlock or Sentinel SuperPro configurations to a driverless configuration, using Sentinel LDK, eliminating the need of installing device drivers on end-user machines.

#### **Sentinel HL Basic**

Sentinel HL Basic is a simple and effective solution for protecting software. The key has no internal memory, requires no preprogramming and is immediately ready for delivery as part of the protected software. Sentinel HL Basic allows protecting highvolume software licenses that do not require ongoing management and maintenance and are offered out-of-the-box.

# **Technical Specifications**

- Industry pioneering White-box cryptography
- High performance SmartCard chip allowing faster software execution and improved operational efficiency
- Standard public cryptography algorithms AES 128, ECC 224, RSA 1536
- Over 64,000 AES encryption keys
- Mini Form Factor: 40.5 x 16 x 8mm
- · Available Configurations: Sentinel HASP HL, Driverless
- · Firmware upgradable in the field
- AppOnChip Compatible

SafeNet's most cost-effective software protection key. Ideal for licensing scenarios that do not require component licensing and where memory is not required.



#### Sentinel HL Pro

Sentinel HL Pro is a comprehensive software protection solution for a variety of purposes including read/write memory and read only memory protection. A single Sentinel HL Pro allows you to protect up to 39 distinct features or applications.

# **Technical Specifications**

- Industry pioneering White-box cryptography
- High performance SmartCard chip allowing faster software execution and improved operational efficiency
- Standard public cryptography algorithms AES 128, ECC 224, RSA 1536
- Over 64,000 AES encryption keys
- Protect over 39 features or applications
- 224Bytes Protected memory
- Mini Form Factor: 40.5 x 16 x 8mm
- Available Configurations: Sentinel HASP HL, Sentinel SuperPro, Driverless
- Firmware upgradable in the field
- AppOnChip Compatible

The ideal solution for component licensing where only a small number of product features are required.



#### **Sentinel HL Max**

Sentinel HL Max is the ideal solution for protecting a large number of applications or features. The Sentinel HL Max key contains a unique 32-bit ID that allows protecting each copy of your unique application while fully controlling the secure software update mechanism.

# **Technical Specifications**

- Industry pioneering White-box cryptography
- High performance SmartCard chip allowing faster software execution and improved operational efficiency
- Standard public cryptography algorithms AES 128, ECC 224, RSA 1536
- Over 64,000 AES encryption keys
- Protect over 2000 features or applications
- 32KB Protected memory
- Mini Form Factor: 40.5 x 16 x 8mm
- Available Configurations: Sentinel HASP HL, Hardlock, Sentinel SuperPro, Driverless
- Firmware upgradable in the field
- AppOnChip Compatible

A step up from the Sentinel HL Pro model, the Sentinel HL Max can be used to license a large number of components or provide a metered licensing model.



#### Sentinel HL Max - Micro Form Factor

Sentinel HL Max offers a robust protection and flexible licensing enforcement in a sleek new design – making it virtually invisible and decreasing the possibility of accidental or deliberate damage.

# **Technical Specifications**

- Industry pioneering White-box cryptography
- High performance SmartCard chip allowing faster software execution and improved operational efficiency
- Standard public cryptography algorithms AES 128, ECC 224, RSA 1536
- Over 64,000 AES encryption keys
- Protect over 2000 features or applications
- 32KB Protected memory
- Micro Form Factor: 18 x 12.2 x 4.5mm
- Available Configurations: Sentinel HASP HL, Hardlock, Driverless
- Firmware upgradable in the field
- AppOnChip Compatible

The ideal solution for cases in which reduced visibility minimizes the likelihood of tampering and accidental or deliberate breakage, including use with notebooks, embedded systems, medical devices, machinery controls and other equipment with stationary licensing keys.



# Sentinel HL Max - ExpressCard Form Factor

Sentinel HL Max provides a powerful copy protection and licensing with the convenience of an inconspicuous ExpressCard form factor. The Sentinel HL Max combines SafeNet's award-winning Sentinel family of hardware protection keys in a sleek form factor.

# **Technical Specifications**

- Industry pioneering White-box cryptography
- High performance SmartCard chip allowing faster software execution and improved operational efficiency
- Standard public cryptography algorithms AES 128, ECC 224, RSA 1536
- Over 64,000 AES encryption keys
- Protect over 2000 features or applications
- 32KB Protected memory
- ExpressCard Form Factor: 75 x 34 x 5mm
- Available Configurations: Sentinel HASP HL, Driverless
- Firmware upgradable in the field
- AppOnChip Compatible

The ideal licensing solution for applications requiring a large number of applications or features offered as an ExpressCard solution.



# Sentinel HL Max - Chip Form Factor

Sentinel HL Max is the ideal solution for protecting and licensing software running on embedded systems. The license protection and implementation becomes an integral part of the product design, completely invisible to the naked eye.

# **Technical Specifications**

- Industry pioneering White-box cryptography
- High performance SmartCard chip allowing faster software execution and improved operational efficiency
- Standard public cryptography algorithms AES 128, ECC 224, RSA 1536
- Over 64,000 AES encryption keys
- Protect over 2000 features or applications
- 32KB Protected memory
- Chip Form Factor, as tape-on-reel or as individual demo sample
- Available Configurations: Driverless
- Firmware upgradable in the field
- AppOnChip Compatible

A comprehensive single chip licensing solution that seamlessly integrates into your existing hardware.



#### Sentinel HL Net

Sentinel HL Net provides a robust solution for protecting enterprise software designed for operating in a networked environment. By using the Sentinel HL Net key, developers can impose restrictions on the number of concurrent users from a secure program in addition to offer the option of concurrent licensing support.

# **Technical Specifications**

- Industry pioneering White-box cryptography
- High performance SmartCard chip allowing faster software execution and improved operational efficiency
- Standard public cryptography algorithms AES 128, ECC 224, RSA 1536
- Over 64,000 AES encryption keys
- Protect over 2000 features or applications
- 32KB Protected memory
- Adjustable concurrent users limitation
- Mini Form Factor: 40.5 x 16 x 8mm
- Available Configurations: Sentinel HASP HL, Hardlock, Sentinel SuperPro, Driverless
- Firmware upgradable in the field
- AppOnChip Compatible

The most robust yet flexible solution for protecting enterprise software designed for operating in a networked infrastructure while offering the option of adjustable concurrent licensing support.



#### Sentinel HL Time

Sentinel HL Time contains a highly accurate Real Time Clock (RTC) which provides time based (expiry date & days from first use) and tamper proof expiration date license management solutions. Sentinel HL Time is the best solution for flexible time-based sales and licensing of protected software.

# **Technical Specifications**

- Industry pioneering White-box cryptography
- High performance SmartCard chip allowing faster software execution and improved operational efficiency
- Standard public cryptography algorithms AES 128, ECC 224, RSA 1536
- Over 64,000 AES encryption keys
- Protect over 2000 features or applications
- 32KB Protected memory
- Real Time Clock for secure time based licensing
- Midi Form Factor: 52 x 16 x 8mm
- · Available Configurations: Sentinel HASP HL, Driverless
- · Firmware upgradable in the field
- AppOnChip Compatible

The Sentinel HL Time is the ideal solution for timebased licensing options (days from first use and expiry date) made possible thanks to its on-board tamperproof Real Time Clock.



#### Sentinel HL NetTime

The Sentinel HL NetTime key allows you to simultaneously limit the number of concurrent users and the application itself when running in a networked environment. Available with flexible options to meet your business needs, the Sentinel HL NetTime allows you to set a maximum of 10, 50 and 250+ licenses that are completely configurable during fulfillment.

# **Technical Specifications**

- Industry pioneering White-box cryptography
- High performance SmartCard chip allowing faster software execution and improved operational efficiency
- Standard public cryptography algorithms AES 128, ECC 224, RSA 1536
- Over 64,000 AES encryption keys
- Protect over 2000 features or applications
- 32KB Protected memory
- Real Time Clock for secure time based licensing
- Midi Form Factor: 52 x 16 x 8mm
- Available Configurations: Sentinel HASP HL, Driverless
- · Firmware upgradable in the field
- AppOnChip Compatible

Combining the features of the both the Sentinel HL Net and the Time keys, the NetTime is the ideal solution for implementing time-based licensing in networked environments.



#### **Sentinel HL Drive**

Sentinel HL Drive combines the powerful copy protection and licensing capabilities of the Sentinel HL Max key with the convenience of a mass storage device. All of the software protection features are available on a USB Flash drive so you can protect, license and distribute your software on a single hardware element.

# **Technical Specifications**

- Industry pioneering White-box cryptography
- High performance SmartCard chip allowing faster software execution and improved operational efficiency
- Standard public cryptography algorithms AES 128, ECC 224, RSA 1536
- Over 64,000 AES encryption keys
- Protect over 2000 features or applications
- 32KB Protected memory, up to 4GB Flash Memory
- Maxi Form Factor: 68 x 18.6 x 8.2mm
- Available Configurations: Sentinel HASP HL, Driverless
- · Firmware upgradable in the field
- AppOnChip Compatible

The Sentinel HL Drive combines licensing flexibility and portability with the convenience of a mass storage device. The Sentinel HL Drive allows you to protect, license and distribute your software using a single hardware element.



#### **Sentinel LDK Master**

Sentinel LDK Master is used by your production personnel to create various licenses and lock them to Sentinel HL protection keys. The Master key allows writing specific data to memory and the update of deployed in-the-field keys. The Sentinel LDK Master contains a highly accurate Real Time Clock (RTC) which enables time based (expiry date & days from first use) and tamper proof expiration date license management options.

# **Technical Specifications**

- Industry pioneering White-box cryptography
- High performance SmartCard chip allowing faster software execution and improved operational efficiency
- Standard public cryptography algorithms AES 128, ECC 224, RSA 1536
- Midi Form Factor: 52 x 16 x 8mm

The Sentinel LDK Master Key is an essential part of the licensing and production process containing your individual Vendor ID.



# **Sentinel LDK Developer**

Sentinel LDK Developer is used by your software engineers in conjunction with additional Sentinel Toolbox protection tools to protect your software and data files. The Sentinel LDK Developer, similarly to the Sentinel HL Time, contains a highly accurate Real Time Clock (RTC) which enables time based (expiry date & days from first use) and tamper proof expiration date license management solutions.

# **Technical Specifications**

- Industry pioneering White-box cryptography
- High performance SmartCard chip allowing faster software execution and improved operational efficiency
- Standard public cryptography algorithms AES 128, ECC 224, RSA 1536
- Midi Form Factor: 52 x 16 x 8mm

The Sentinel LDK Developer key is used as part of the software protection process defining the exact licensing terms as per a specific product or feature.













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