



PRODUCT BRIEF

# Sentinel HL

## Sentinel LDK Overview

Gemalto's Sentinel LDK integrated software licensing and security solution enables software publishers to grow their business by successfully protecting, packaging, tracking, and managing their product portfolios. Through its role-based tools and by combining hardware and software-based protection into one solution, Sentinel LDK software protection and licensing system grants decision makers the flexibility to choose the level of protection and licensing that best fits their business needs today, tomorrow, and beyond.

## Sentinel HL—hardware-based software protection keys

Sentinel HL is the hardware-based protection and licensing component used in Sentinel LDK and is offered in a variety of form factors including USB, ExpressCard, Board and Chip. The keys also include a version with Flash Memory in the form of microSD cards which can be inserted into the key. The Sentinel HL driverless configuration eliminates the need for installing device drivers on end user machines. Furthermore, these driverless keys are equipped with Sentinel V-Clock within the key memory which prevents time tampering without on-board battery for Real Time Clock.

By incorporating industry leading encryption, code obfuscation and our unique Sentinel Envelope technology, Sentinel HL offers the highest level of protection available against piracy and illegal copying. A secure communication channel established between the hardware key and the protected application provides powerful resistance to "man-in-the-middle" and brute force attacks. To ensure legitimate use of network concurrency in network environments, all the driverless configuration keys, apart from Basic keys, support network licensing\*.

## Features & Benefits:

- > Unmatched Protection Against Software Piracy
- > Strong Intellectual Property Protection
- > Secure & Flexible Licensing
- > Award-winning Quality & Performance
- > Secured Time-Based Licensing with Sentinel V-Clock
- > AppOnChip Compatible

## Physical Dimensions

Sentinel HL family of keys boast the industry's widest selection of form factors from standard to nano-sized dimensions. We provide a variety of customization options enabling software publishers to brand and label the keys in the most appropriate and effective way to meet their evolving business needs.

## Unmatched Protection against Software Piracy

Strong copy protection guarantees that software publishers get paid for every software copy. As the most secure hardware-based software protection and licensing solution on the market, Sentinel HL utilizes a highly secure SmartCard chip providing the utmost security against malicious hardware attacks such as Differential Power Analysis (DPA) and electron microscopy. Additionally, Sentinel HL keys employ a wide range of standard public cryptographic algorithms such as AES 128, ECC 163, RSA 2048 as well as innovative methods such as white box cryptography, guaranteeing a robust link between the application and the key itself. Gemalto is the industry pioneer in using white box cryptography as part of the communication between the protected application and the hardware key making sure that data passing through the channel is fully encrypted ensuring that it cannot be replayed.

\*This feature requires an ISV to purchase a pre-paid pool of network seats.

## Strong Intellectual Property Protection

Strong Intellectual Property (IP) protection allows software publishers to prevent industrial espionage and actively maintain their competitive advantage. Beyond the powerful encryption algorithms found between the protected application and the protection key, Sentinel software protection and licensing system offers additional means of wrapping and protecting your application executables and DLLs in a virtually impenetrable shield called the Sentinel Envelope.










## The Sentinel Envelope

Gemalto's industry-famous Sentinel Envelope wraps your protected application to provide robust IP protection against reverse engineering through file encryption, code obfuscation, and system-level anti-debugging. It then creates multiple, random layers of protection for each file, making it extremely complex and time consuming for hackers to remove while ensuring that software code is safe from exposure while en-route to its end-user destination.

Sentinel Envelope also offers an even greater level of protection with AppOnChip. The AppOnChip feature facilitates inseparable binding of the Sentinel hardware key to the application. This fully automated process presents software vendors with a list of compatible functions from their application, which can then be loaded and executed, encrypted and signed, on the hardware key itself. This additional security measure makes it the most secure software licensing implementation in the market.

## Secure & Flexible Licensing

Sentinel HL keys support the following licensing models:

	<b>Perpetual</b> – Once purchased the software can be used indefinitely.
	<b>Feature-Based</b> – Enable or disable product features based on the user's needs and budget.
	<b>Pay-Per-Use</b> – Employ memory counters to charge end-users for the number of sessions or the number of features they use.
	<b>Network Concurrency</b> – Enable multiple sessions in a network environment.
	<b>Time-Based</b> – Enable subscription or rental of software for a specific time period.
	<b>Custom Licenses</b> – Flexibility to create complex licenses models to best suit business needs using counters, secure memory and unique ID.
	<b>Tamper-proof licenses</b> – LicenseOnChip™ technology embedded in each protection key ensures software licenses are hardware protected.
	<b>Remote updates</b> – A powerful Remote Update System (RUS) sends encrypted RSA signed license terms to users as to ensure secure remote updates in the field. UpdateOnChip™ technology embedded in every key ensures that the key authenticates all updates of data and license extensions.
	<b>Trialware (try-before-you-buy)</b> – A software-based solution for creating, protecting, and distributing secure DEMO versions of your software products.

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## Gemalto Software Monetization Solutions

Gemalto is the market-leading provider of software licensing and entitlement management solutions for on-premise, embedded and cloud-based software vendors. Gemalto's Sentinel is the most trusted brand in the software industry for secure, flexible, and future-proof software monetization solutions. For more information, visit:

[www.gemalto.com/software-monetization](http://www.gemalto.com/software-monetization).

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

[sentinel.gemalto.com/software-monetization/sentinel-hl/](http://sentinel.gemalto.com/software-monetization/sentinel-hl/)

**To download a FREE Sentinel LDK Developer Kit, visit:**

[www5.gemalto.com/sentinel-ldk-trial-en](http://www5.gemalto.com/sentinel-ldk-trial-en)

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