



ADVANTECH SOFTWARE SERVICES



Advantech Embedded Security ID

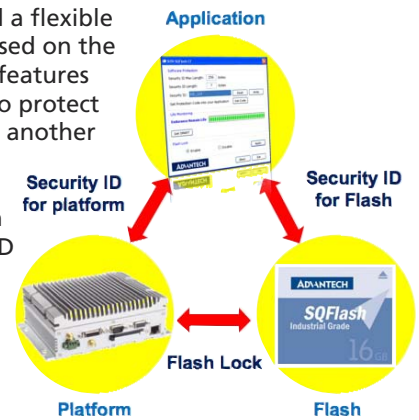
- Designed to efficiently protect innovation and intellectual property
- Protection means cost savings, increased security, reduced effort
- Security ID approach does not require hardware modification or additional hardware
- Protected application only runs on authorized target system
- Protected application can be tied either to BIOS or to Flash
- Application can send message over LAN or take other action
- Use of LAN MAC address makes for unique Board ID
- Cryptographic encoding via SHA hash function designed by US National Security Agency
- Advantech APIs and sample code for quick application development
- App shows Security ID status
- Available for most Advantech embedded hardware and storage
- Unlimited use for any single purchaser

Software Protection Transparent, Reliable Security Functions

No one likes copy protection, but sometimes it is simply necessary. If you're a system integrator you know how easy it is for the competition to copy embedded applications by simply buying a system and then copying the embedded app. Those applications contain innovation, expertise, and valuable intellectual property. Protecting your work from pirates without inconveniencing legitimate users represents a fair and reasonable solution.

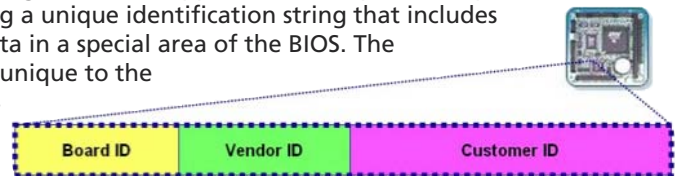
The Advantech Security ID Approach

Advantech's Embedded Core Services group has created a flexible and non-intrusive software protection system that is based on the concept of an embedded "Security ID" and supporting features that work in conjunction with Security IDs. The idea is to protect intellectual property whether the software is on disk or another type of storage media. To implement this approach, Advantech created a Security ID system for platforms, a Security ID system for Flash, and a Flash Lock protection system. As shown in the diagram to the right, Security ID based software protection ties together any two of the three essential components of an embedded system. The Security ID for platforms locks an application to a hardware platform. The Security ID for Flash locks an application to a specific Flash storage component. And Flash Lock ties a Flash storage component to a specific hardware platform device.



Security ID for Platform

The Security ID for Platform is designed to lock applications to a particular piece of hardware. It does so by storing a unique identification string that includes both customer and hardware data in a special area of the BIOS. The data string contains data that is unique to the hardware (the first MAC address of the board) as well as to the vendor and the customer. The data string is then encrypted by using the well-established SHA-1 (Secure Hash Algorithm) designed by the National Security Agency (NSA) and published as a U.S. Federal Information Processing Standard.



Security ID for Flash

Security ID for Flash works the same way as the Security ID for Platform, except that it ties an application to a particular piece of Flash storage. Instead of residing in the BIOS, the Security ID is stored on a specific, hidden area on a CompactFlash card. Once implemented, the software operates only when the authorized CF card hardware is present, and nowhere else.

Flash Lock

The Flash Lock feature is used to tie a SQFlash storage device to a specific piece of hardware. A locked SQFlash device cannot be read by any card reader and it cannot be used to boot from without the presence of a BIOS with the unlock feature.



ADVANTECH SOFTWARE SERVICES

Security ID



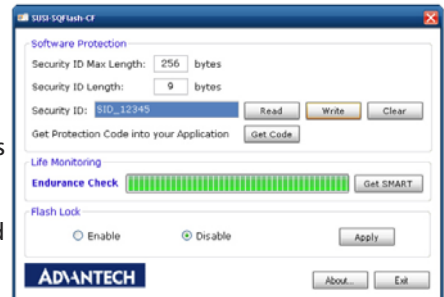
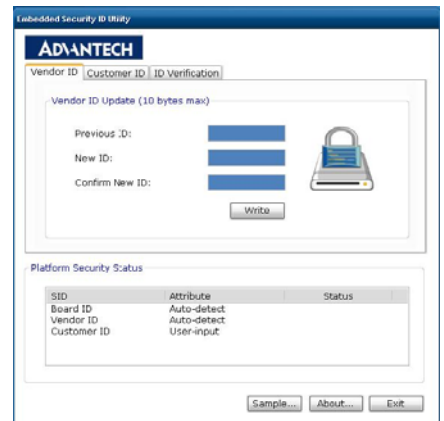
Embedded Security ID: Software Protection on Platforms, CF Cards, Flash

Security ID-based protection is available for platforms as well as for a variety of Advantech storage media such as the Advantech SQF-P10 Series of industrial CompactFlash cards, the SQF-P25 Series of 2.5-inch PATA SSDs, and the SQD-PDM Series of PATA disk modules. Since the Security ID is stored in the BIOS or in Flash, no further hardware is needed.

Once the Embedded Security ID system is installed, the Software Protection utility can be used to create a protection record. Upon entry of an authentication number, hardware information is registered into the BIOS. The vendor ID is then entered, confirmed, and written. For security purposes, the previous vendor ID must be supplied before a new one can be entered. This process is repeated for the customer ID. Finally, an ID Verification API double-checks the entered data. Once that's done, running a test application will now generate a small green icon in the Windows system tray, indicating that the security ID has been successfully written and is ready for use.

The Embedded Security ID utility also provides access to sample code that shows how to access the security IDs. This code can be copied into Microsoft Visual Studio 2005 where the application is compiled to call the Advantech Security ID API. After a successful build, the code can then be run on the targeted Advantech ePlatform device.

Flash-based security is implemented with Advantech SQFlash software that includes software protection, life-monitoring features, and Flash Lock. Security and early warning functions can easily be developed and included into applications. The security string is encrypted and written to a hidden area on the CF card, making it easy to protect applications. The software has a graphical user interface, performs Security ID read/writes, and can generate sample code for inclusion into applications. Once implemented, the software operates only when the authorized Flash hardware is present.



How Do You Know Your Application Is Protected on a Platform?



Upon installation, the Embedded Security ID utility and library on an Advantech platform running one of the supported operating systems, the Embedded Security ID version image is flashed to the BIOS. The status of the Software Protection system can be checked by running a test app supplied with the package. It will place a small red icon into the Windows system tray if there is no security data in the BIOS, and a small green icon if security data has been entered and the security ID is functional and ready to protect the software.

For more information:

www.advantech.com
ECGInfo@advantech.com
1-800-866-6008