

SecureCore Tiano™ for Embedded Applications







Happy moments embedded
in every ride

Embedded Solutions

Embedded computing touches every aspect of our daily lives. Phoenix has a long and successful history of targeted solutions across a vast gamut of embedded categories including home energy, media phones, in-vehicle infotainment, digital signage, gaming, medical devices, security, and surveillance.

Phoenix SecureCore Tiano (SCT) is firmware for trusted embedded networked devices. It goes far beyond the traditional stand-alone BIOS to provide the features necessary to manage and secure today's connected devices. It is the only core system software solution with built-in protection against malicious attacks and accidental damage to the factory-installed system software image.

Addressing the Core Needs of Embedded Customers

 <p>Security</p>	<p>Ensuring system integrity, maintaining privacy of user, user authentication / authorization and data security at all times</p>
 <p>Connectivity</p>	<p>Devices can be easily connected to the network via UEFI applications</p>
 <p>Reliability</p>	<ul style="list-style-type: none"> • 4Xs Long Run Testing. At Phoenix Technologies, our power-on/power-off tests consist of 2000 cycles. In addition, a comprehensive QA test of peripherals is performed to ensure compatibility with Windows, Linux, Meego*, and DOS. (*Meego support depends on vendor POR.) • Maximize up-time by detecting system failures before they happen.
 <p>Green</p>	<ul style="list-style-type: none"> • Battery Management: Control the complexity of charging/discharging batteries • Power Management: Dynamically configure power dissipation of a device

Phoenix SCT is optimized for the networked embedded systems market. SCT supports a full range of embedded systems from heavy-duty HPC that works 24-7, to factory automation that controls AOI and manufacturing equipments, to remote manageable ATMs and KIOSKS, and to interactive GFX centric gaming and digital signage. Combined with Phoenix Pre-Boot Authentication (PBA) and SATA/AHCI HDD password support, SCT offers a strong, public-key-encryption security kernel capable of protecting the core system software, the managed application environment, the operating system and its applications.

SCT includes support for a protected application area that is designed for storage of PC management and recovery applications. In combination with the built-in security kernel, the environment is protected from malicious attack or accidental mischief. Authentication supported in SCT enables Phoenix manufacturing, OEMs, and system-builder partners to deliver a complete and secure execution environment for built-in utilities and applications.

Key Benefits for Embedded System Developers

CSM, Compatibility Support Module	<ul style="list-style-type: none"> Phoenix's most accredited Award CSM is now available on a UEFI BIOS. A fully configurable CSM module carries unique features to new platforms. CSM source code is also accessible for easy customization.
DXE	<ul style="list-style-type: none"> An architectural benefit of UEFI allows device/IO drivers to be executable from the firmware level, such as touch screen support that enables users to control POST with a touch screen instead of a mouse. Touch screen is supported for Panel PC, Digital Signage, POS, and ATM/KIOSK. Ease of use on POST setup with a virtual keyboard. No more hassling with a standard keyboard and mouse!
Variable Enhancements	<ul style="list-style-type: none"> In EFI, all variables are stored in flash. To improve system reliability, SCT provides a new extensible interface that allows you to store variables to a second media (such as CMOS).
Flash Proof	<ul style="list-style-type: none"> Provides a secure sub-region inside the flash part to preserve important data (such as password, UUID, etc.) that won't be overwritten by a BIOS flash update.
UEFI Boot from Legacy RAID OPROM	<ul style="list-style-type: none"> SCT provides an interface that allows booting to a UEFI OS when the HDD is connected to RAID with legacy OPROM.
Greater than 2.2 TB HDD Support	<ul style="list-style-type: none"> SCT supports the GUID Partition Table (GPT). Computers with Phoenix SCT can support HDD sizes greater than 2.2 TB.
Advanced Legacy Boot	<ul style="list-style-type: none"> Allows drop-in CSM as a boot option and supports booting from a non-primary partition.
Capsule Update	<ul style="list-style-type: none"> Modularized and protection update information is provided by a Capsule Update to avoid unexpected OS behavior changes or incidental interruption. Capsule Update also supports Crisis Recovery.

Feature Analysis

Product	SecureCore Tiano
Code	Human readable: C
Boot Time	~ 3.5 seconds on most CRBs and optimal laptop designs
Bring-Up	< 48 hours
Customization	<ul style="list-style-type: none"> 2-3 weeks Porting-optimized product
Reliability	High
Compatibility	<ul style="list-style-type: none"> EDK1, UDK2010 UEFI 2.3, PI 1.2 Intel Green H variants Phoenix variants with instrumentation
Architecture	<ul style="list-style-type: none"> Enables 3rd parties Application SDK for Plug-In manufacturers
UEFI Plug-Ins	<ul style="list-style-type: none"> In-ROM Diagnostic SecureGuard



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