



# Effortless Performance Upgrade and Added Intelligence Facilitates Entry to New Gaming Markets

## Project Summary

**Country:** Europe

**Industry:** Casino gaming machine

**Challenge:**

- Upgrade performance for new OS and multimedia content
- Additional security and SAS networking for entering new markets
- Satisfy regulatory requirements

**Solution:**

- DPX-S435 Gaming motherboard
- DPX Secureboot SDK
- DPX SAS Engine SDK

**Benefits:**

- High-performance Intel® 4th generation Core™ i platform
- Backwards compatible format and software API
- Proven and approved software solutions
- Accelerated time-to-market

As casino gaming machines become increasingly elaborate multimedia computer systems, OEMs require more powerful platforms with greater bandwidth, faster processors, and high performance graphics hardware to output high-definition media-rich content to two or more displays.

## Challenge

Manufacturers of the electronic gaming machines used by the casino industry are subject to many regional jurisdictional regulations and certification specifications. Advantech understands the challenges that such regulations pose for the entire supply chain. To upgrade a slot machine platform or sell an end product to new markets, OEMs must re-certify the product in each target jurisdiction. A number of markets also require specific capabilities that many OEMs do not have, such as SAS networking (slot accounting system) or BIOS-level media validation (Secureboot).

## Solution

The company, one of Advantech's long-standing customers in Europe, successfully migrated from the DPX-S410 platform to the latest high-performance platform DPX-S435. Because of the mechanical format compatibility, the migration was easy and simple to perform. To enter new markets, the OEM added SAS and Secureboot capabilities to the platform using off-the-shelf product solutions.

## Easy Transition to a High-Performance Platform

With comprehensive I/Os, COMs, storage, and advanced security, DPX-S435 is the first integrated Intel® Xeon® single-board computer designed specifically for the gaming industry. Featuring a fourth-generation Intel® Core™ architecture, this platform supports various CPUs, including dual-core Celeron, Core i3, Core i5, Core i7, and Xeon® CPUs. To limit cost, the customer selected the Intel® Core i3-4330TE CPU. Because DPX-S435 supports Windows 7 and 8, embedded Microsoft OS, and Linux, the customer could transition between platforms without changing the OS. The migration and certification were drastically simplified by the format and API/software compatibility, as well as the legacy OS support.

## Added Intelligence with Field-Proven Software Solutions: Secureboot Security and SAS

The OEM adopted Advantech's off-the-shelf software solutions to extend the product functionalities. DPX Secureboot SDK facilitates the development of a low-level security architecture that satisfies most regulatory standards, including those established by GLI. To customize the machines for international markets, both Secureboot and SAS Engine were integrated. Most casinos have networked slot machines monitored from centralized servers that run proprietary accounting applications, and each slot machine must communicate using the correct protocol, message format, and server application data. The SAS protocol developed by IGT is the most commonly used, leading to its implementation on other machines and slot floor systems. With this highly efficient system and integrated display solution, Advantech provides system integrators with a reliable and durable foundation for future development.

### Advantech Solutions



#### DPX-S435

- High performance Intel® Dual and Quad Core™ CPUs from Celeron® to Xeon®
- Comprehensive gaming features
- High performance integrated or PCI-Express graphics
- Easy integration for gaming applications
- Full featured Driver API for IO



#### DPX Secureboot

- Security ROM code toolkit
- Customized for individual applications
- Field tested
- Complies with international gaming regulations



#### SAS Engine SDK

- Comprehensive SAS protocol library
- Over 175 SAS meters, 150 SAS events defined
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- Accounting, metering, TITO, EFT/AFT
- Proven and field tested

