Intelligent Eye DVR provides security peace of mind

Intel and Shenzhen Chuangguan look to the future with intelligent video surveillance

Introduction

The security surveillance market is undergoing rapid expansion, keeping pace with exponential growth of IP video technology and video content analytics software. Video surveillance and information technology are integrating, with digital IP surveillance becoming more intelligent, integrated and centralized. Security surveillance with video intelligence are important to prevent or minimize criminal and terrorist threats

Intel® architecture offers video processing, platform scalability, and interoperability, making it the obvious architecture choice for modern security surveillance systems. The Intelligent Eye Digital Video Recorder (DVR) jointly developed by Shenzhen Chuangguan Intelligent Network Tech Co., Ltd and Intel is capable of intelligent video analysis, real-time alarms and unmanned control, offering superior market competitiveness through advanced intelligent video features and lower total cost of ownership.

Challenge	
	• **Compatibility and Scalability** Video surveillance systems must be flexible and offer upgrade possibilities to meet evolving security needs in different market segments. In addition, hardware and software drivers must ensure complete compatibility for shorter development time and quicker time-to-market.
	• **Security and Reliability** Most end-customers require DVR at low failure rate when in constant use (24 hours, 7 days a week). Users are also asking a mechanism to prevent recorded content from being illegally copied or stolen, and safe against attacks from other network entry points.
	• **Total Cost of Ownership** Security surveillance systems supporting high camera counts, simple video storage and rudimentary human error-prone visual analysis are often labor intensive and can no longer meet today's complex security needs. Additionally, increasing demand for intelligent real-time surveillance systems that can detect and track moving targets looks set to be an inevitable trend.
Solution	Based on comprehensive analysis of various security surveillance issues, Shenzhen Chuangguan adopted Intel® Core™2 Duo processor family to develop a series of intelligent DVR platforms used in different industries including public security, prison administration, oil & gas, mining, retail, transportation, warehousing and logistics.
	Intel® Core™2 Duo processor E8400 is built on advanced 45nm high-k metal gate silicon technology and supports 64-bit instruction set. The processor has intelligent power management functionality and interfaces to allow multi-channel intelligent video processing and real-time alerts.

The 3.0GHz Intel Core 2 Duo processor E8400 provides powerful real-time video analysis, supports video encoding and decoding software, offers various intelligent video analysis capabilities and has a PCIe* interface that supports up to 16-channel video capture.

With Intel® Advanced Digital Media Boost, Intel® Streaming SIMD Extensions 4.1 (Intel® SSE4.1) instructions execution significantly improves video processing performance. The 128-bit SSE instructions are issued at a throughput rate of one per clock cycle effectively doubling their speed of execution on a per clock basis over previous generation processors, enhance video encoding processing.

The parallel computing offered by Intel® Hyper-Threading Technology (Intel® HT Technology) also improves the security system performance.

Compatibility and Scalability

Intel architecture supports multiple operating systems and application software, enabling efficient system development and management as well as simplified system expansion and upgrade. In addition, the open-standard Intel architecture allows flexible intelligent video content analysis software implementation to address different security use case models and market segments. Intel architecture is also compatible with various network and communication interfaces, easing digital security surveillance development in IP network environment. As transmission technology continues to improve and 3G/4G technologies become more popular, network connectivity based on Intel architecture-based platforms can be easily improvised, making today's DVR development investments future-proof.

Security and Reliability

Intel® Trusted Execution Technology is a set of hardware-based mechanisms that shield Intel® Core™2 Duo processor-based DVR platforms from software-based virus attacks, ensuring confidentiality and integrity of data stored in the DVR. This trusted environment protects and simplifies video surveillance management.

Total Cost of Ownership

According to Shenzhen Chuangguan*, the Intelligent Eye DVR based on the Intel Core 2 Duo processor E8400 received positive customer feedback since its introduction to the market. The video content analysis software has reduced human errors and substantial manpower cost savings, lowering Total Cost of Ownership. Most importantly, the Intelligent Eye DVR provides real-time surveillance and early warning, curbing security breach problems.

"Shenzhen Chuangguan* has two objectives: To offer cutting-edge video surveillance technology and serve a diversified customer base. Intel® architecture has helped Shenzhen Chuangguan meet these objectives. Although proprietary solutions are common today, closed-standard platforms may lead result scalability and compatibility issues in the future. Working with Intel and its rich embedded ecosystem, offers us rich resources from software, applications, IP protocols to storage protocols, allowing us to solve large-scale integration and scalability challenges, lower our overall development costs and simple application upgrades in the future. These are Shenzhen Chuangguan's Intelligent Eye DVR core competitiveness."

• Li Yi, General Manager of Shenzhen Chuangguan

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