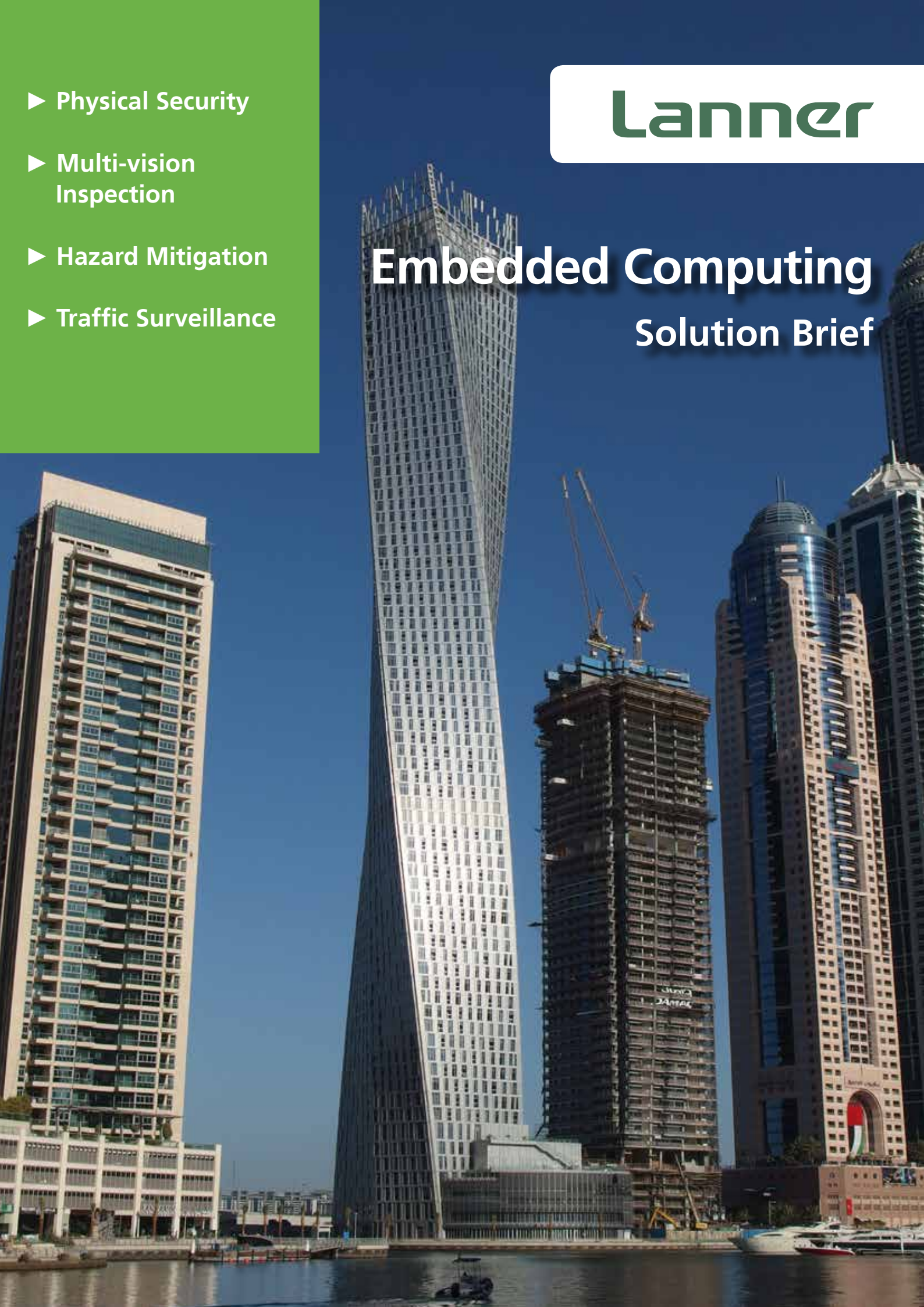
- Physical Security
- Multi-vision Inspection
- Hazard Mitigation
- Traffic Surveillance

Lanner

Embedded Computing

Solution Brief



Multi-vision Inspection

Background

Machine vision uses cameras, computers and software algorithms for carrying out inspection tasks that require precise and repetitive verification and testing in high speed. Accomplishing such tasks with human vision is extremely difficult. While human eyes are capable of making precise measures in details, they aren't equipped to do so in a rapid and repetitive manner

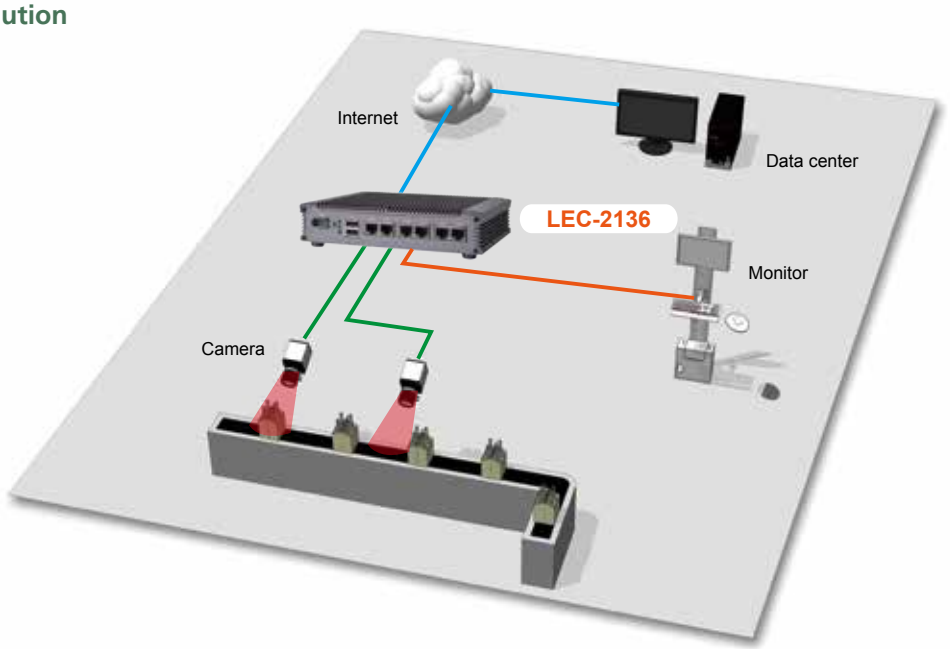
Replacing human vision with machine vision for verification and testing tasks is a part of industrial automation, intended for achieving faster TTM and optimizing resources while at the same time lowering cost of ownership and improving risk management.

A global leader who specializes in smart, safe and sustainable machine vision technology learnt about Lanner while seeking hardware solutions for building a factory automation system for inspecting recycled glass bottles at beverage packaging factories. This packaging inspection system would automate the most stringent and thorough check on all recycled bottles for any kind of defect, determining their reusability

Key Requirements

- **High-performance CPU: for enabling glass inspection at a rate of up to 42,000 bottles per hour**
- **Fast GbE interface: for supporting the installation of multiple cameras and the connection to the factory network for remote management**
- **Rugged encasing: for 24/7 availability and minimal amount of manual maintenance and troubleshooting**

Lanner Solution



Lanner's LEC-7070, a fanless box PC powered by Intel's Core i Series processors, was eventually selected, among other suppliers' offerings, as the most suitable hardware on which the bottle inspection system could be built.

This fanless box PC is based on Intel's Ivy Bridge microarchitecture and offers a rich I/O interface. It strikes the perfect balance between performance, cost and combines processing power, industrial-grade I/O functions, image-capturing and network communication capabilities in a compact form factor.

Multi-vision Inspection

Benefits

High Performance
Intel Core i7/Core i3 CPU with Hyper-Threading & Turbo Boost Technology

Rich I/O
Hardware integration simplification via 4 USB ports, 1 DIO port and 2 COM ports

Wireless Connectivity
Wireless/3G connections via built-in SIM card reader

Fanless Design
Aluminum chassis and fanless/dustproof design

Wide Temperate Range
Extreme operating temperatures from minus 20°C to 50°C

Multiple LAN Ports
Multi-camera setup via dual GbE LAN ports and VGA/ HDMI video-out ports

Featured Products

LEC-7070

10 Serial Port Fanless DIN Rail Box PC with Intel Atom D525

- Intel® Atom™ Dual Core D525 processor with ICH8M chipset
- DDR3 memory, maximum capacity up to 4GB
- 10 Serial COM ports with ESD and surge protection
- Fanless design with corrugated aluminum
- Wide temperature range (-20~55°C)
- 15KV ESD and surge protection on Serial COM ports
- Rich I/O selections (4 x USB 2.0, 1 x VGA)
- 2 Intel GbE LAN ports with magnetic isolation protection
- Storage: 1 x CF card slot and 1 x SATA port

LEC-2136

Fanless Industrial DIN Rail Box IPC with Intel® Atom™ N455 CPU

- Intel® Atom™ N455 processor with ICH8M chipset
- DDR3 memory, maximum capacity up to 2GB
- Fanless design with corrugated aluminum
- Wide temperature range (-20~55°C)
- ESD and surge protection on Serial COM ports
- 2 to 4 Intel GbE LAN ports with magnetic isolation protection
- Flexible I/O: 4, 6, or 8-port serial COM or 2, 4 Gigabit Ethernet ports
- Storage: 1 x CF card slot and 1 x SATA port

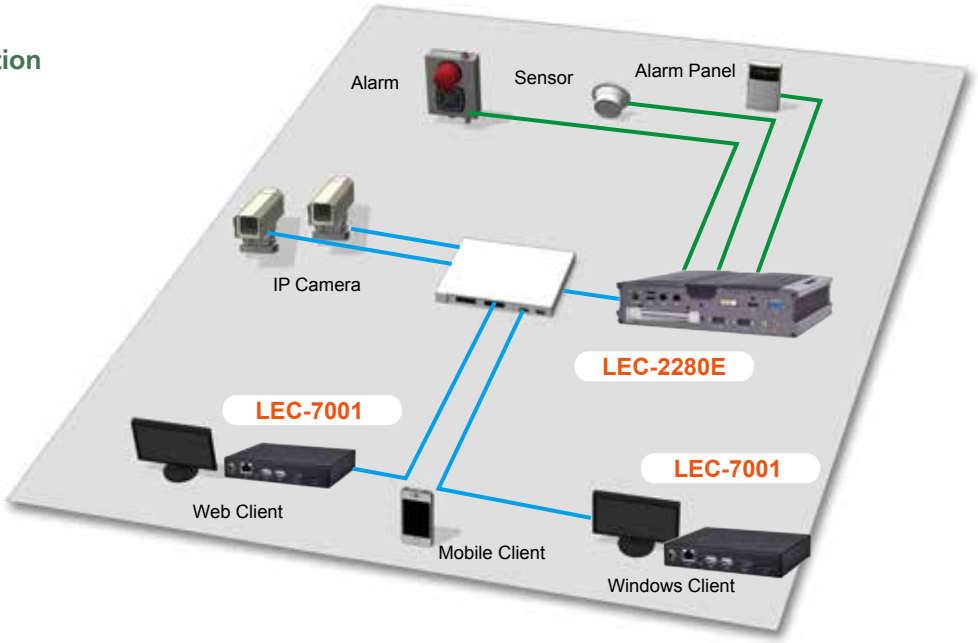
Background

Enhanced security operations such as physical security and surveillance analytics are required by almost all industries, including banking, retail, critical infrastructure, government, corporate, education and public transportation. Such security measures provide real-time intelligence for live detection of safety and security events and are instrumental not only in safeguarding business intelligence but also in facilitating efficient workforce management and optimizing operational decisions.
A global leader specialized in providing intelligent IP video management system for security surveillance and business intelligence applications came to Lanner with a request for a physical security gateway control solution.

Key Requirements

- **Rich I/O interface for connecting multiple devices (cameras, security sensors, alarms, and control panels)**
- **Power CPU for processing security video and data that are to be analyzed for decision making and actionable intelligence.**
- **Scalability for installing/integrating analytics applications**

Lanner Solution



Lanner's LEC-2280, a high-performance fanless industrial PC was eventually selected as the ideal server hardware. This particular box PC is built with Intel's 3rd Generation Core® i3/i5/i7 processors and features excellent performance and rich expansion capability, making it ideal for delivering the kind of stability and longevity required for developing surveillance analytics and physical security gateway control systems. On the other hand, Lanner's LEC-7001, a compact and RISC-based box PC running on Freescale's i.MX 6 Series processor was chosen as the client hardware. The LEC-7001's HDMI port enables video decoding at 1920 by 1080P resolution at 60 frames per second, making available crisp clear video footages for viewing at the client ends.

Benefits

High Performance CPU
Intel Core™ i3/i5/i7 processors (Ivy Bridge) CPU/GPU performance

Flexible Installation
Various mounting options for deployment flexibility

Multi-display Capability
Flexible and rich I/O interface for multiple video-out ports

Fanless Design
Aluminum chassis and fanless/dustproof design

Multi I/O Expansion Layer
Use standard riser cards to get the I/O configuration you need

Wireless Communication
Integrated SIM card reader for 3G communications

Swappable Storage
a 2.5" SSD/HDD drive bay for up to 2TB of storage

Wide Input Range
The 9 to 30VDC wide input range for most IoT applications

Featured Products

LEC-2280/2280P2

Fanless Embedded Computer with 3rd Gen Intel Core i7/i5/i3

- 3rd Gen Intel Core i7/i5/i3 processor
- 1 or 2 Expandable PCI or PCIe slots
- Fanless design with corrugated aluminum
- Multiple display outputs (HDMI, VGA and DVI-D)
- Wide voltage input range (9~30VDC)
- Easily-opened chassis, no tools required
- Integrated SIM card reader
- Multi I/O expansion layer
- Remote power control

LEC-7001

RISC-based Fanless IPC with FreescaleTM i.MX 6 Series Processors

- Low-power Freescale i.MX 6 series processors
- Fanless and compact design
- Full HD 1080p video decoding
- Built-in 4GB eMMC
- 1 x HDMI video output
- 1x GbE LAN port
- 2 x USB 2.0 ports
- Screw-locked power plug
- Various wall-mount options