Opening the Gates on New Possibilities for Logistics Companies

Industry: Logistics
Product: BOXER-6616

Introduction

Logistics firms deal with huge amounts of freight, coordinating hundreds of vehicles, drivers, and warehouse staff to ensure loads get delivered on time. To maximize profit margins, operations have to be extremely efficient, and that means trucks have to be able to get in and out of loading yards as quickly as possible. At the same time, questions of security demand that barriers be installed at these facilities to keep out unlicensed vehicles and protect valuable stock.

To manage these competing demands, employees have traditionally been stationed at security gates, opening them for recognized vehicles and keeping them closed to unfamiliar vehicles and drivers. However, automated systems, which don't take breaks or perform other duties, have the potential to be cheaper and more reliable.

With the world's largest logistics companies looking to invest in computerized networks, system integrators have approached AAEON to provide industrial PCs that could streamline this crucial logistical process.

Customer challenges

The first component of an automated gate system is an industrial camera powerful enough to capture clear images of registration plates on moving vehicles in all types of weather – including rain and fog.

These cameras are now available, but for them to be effective, they need to be connected to computers that can work 24 hours a day, seven days a week to process the video feed they receive.

There aren't many computers on the market capable of performing this task, and this is just the first user requirement.

Installation

To safeguard applications and keep them protected from the worst elements of the weather, controllers need to be mounted in small electrical boxes attached to pillars or lampposts. This means they need to have a slim profile and, since they might be difficult to access, a quick, remote reboot system that will help operators save time on routine maintenance work.

Harsh conditions

With the end user planning to use these systems year-round in locations throughout Europe, they need to be tough enough to cope with extreme highs and lows of temperature. Additionally, despite the fact that the controllers will be enclosed, their chassis will still have to withstand drafts and dripping water during heavy rain.

Wireless connection

For security gates to open only for recognized vehicles, images of their registration plates must be sent to a central server to be checked against a database of verified plates. This information transfer can be done via a wireless Internet connection, but to keep that connection stable, the computer will need a powerful 4G LTE module and antenna.

Accessible storage

The end user wanted to keep backup records of the video captured by its cameras. Transferring data from one hard drive to another can be a long and tedious job. With conventional systems, it can be done by removing the computer's chassis and taking out the hard drive, or by connecting a large, portable hard drive, downloading all the files, and then uploading them somewhere else. These options are a waste of employee resources, so a better alternative was requested.

Future-proof systems

The range, popularity, and effectiveness of IoT applications is continually growing, and although the end user currently only wants a gate system, it also wants to know that the solution it invests in could be expanded to handle additional applications in the future.

AAEON's solution

AAEON produces a range of powerful box PCs, but to meet the specific requirements of this project, engineers worked on a customized version of the BOXER-6616. The computer is fitted with an Intel® Pentium® N4200 or Intel Celeron® N3350 and up to 8GB DDR3L 1866 SODIMM memory. With this computing power and a pair of Ethernet ports, the BOXER-6616 is the perfect controller for modern industrial cameras.

A strong wireless connection is easily achieved through a 4G module and antenna, and since the PC measures only 197mm by 110mm by 55mm, it can comfortably be installed in standard electrical boxes.

Rugged features

The BOXER-6616 is certified to operate in temperatures ranging from -20°C to 70°C, so it can safely be left outside year-round at industrial parks almost anywhere in the world, and its IP41-rated chassis keeps internal components protected from debris and dripping water.

With 9-24V DC input support, the system can ride out the fluctuations in current associated with solar-generated power sources. The system also has OVP, UVP, OCP, and SCP to withstand sudden surges and drops in power.

User-friendly features

To ensure that the end user has easy access to the hard drive, AAEON custom-built a removable HDD tray for the system. Customization is one of AAEON's core strengths, and around 60% of the company's business comes from the modification of catalog products to suit customers' specific needs. With its expertise in this area, AAEON is able to adapt systems and features faster and cheaper than its rivals. Another time-saving feature is the PC's remote power switch, which allows users to turn off the system without having to physically access it.

Rich I/O

Four USB3.0 ports and six COM ports mean the BOXER-6616 has the capacity to connect to additional peripherals, leaving open the possibility that it could manage other applications in the years to come.

Impact

Using AAEON's BOXER-6616, system integrators have put together a solution that is both reliable and cost effective. The end user is also enjoying the benefits of an efficient, automated system, and the box PC's rugged resilience means it will continue to run without fault throughout both the hottest summers and coldest winters. Finally, thanks to AAEON's customized removable HDD tray, the end user can easily keep records of video footage, which could prove invaluable if the company ever did face any security issues.
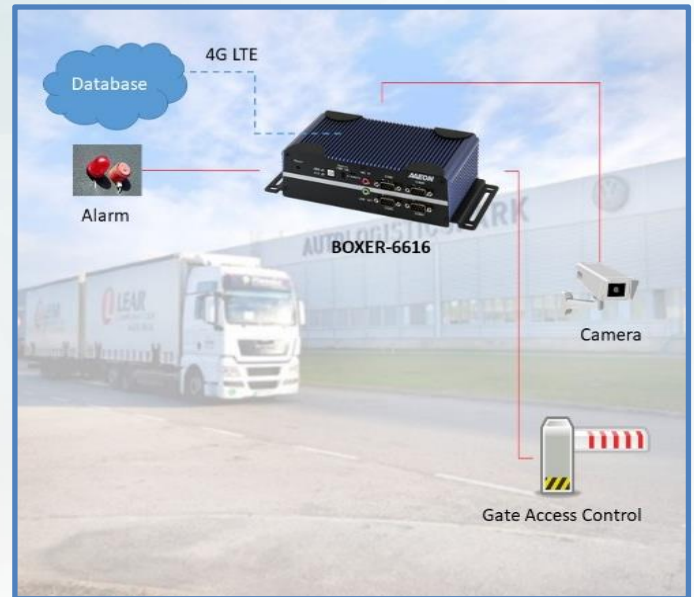
ABOUT AAEON

Established in 1992, AAEON has become one of the leading designers and manufacturers of advanced industrial and embedded computing platforms. Committed to innovative engineering, AAEON provides Industry 4.0 integrated solutions, hardware and intelligent automated services for premier OEM/ODMs and system integrators worldwide, as well as IoT solution platforms that seamlessly consolidate virtual and physical networks. Reliable and high quality computing platforms include industrial motherboards and systems, industrial displays, rugged tablets, PC/104, PICMG and COM modules, embedded SBCs, embedded controllers, network appliances and related accessories. AAEON also offers customized end-to-end services from initial product conceptualization and product development through to volume manufacturing and after-sales service programs. It is also committed to continuously redefining and harmonizing the management and development processes of the industry.

With its constant pursuit of innovation and excellence, AAEON became a member of the ASUS group in 2011, enabling the company to further strengthen its leadership, access advanced technology from ASUS, and leverage resources from within the group. AAEON is poised to offer more diversified embedded products and solutions at higher quality standards to meet world-class design and manufacturing demands in the years to come.

AAEON is an Associate member of the Intel® Internet of Things Solutions Alliance.

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