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NEXCOM In-vehicle Computers Help Local Electric Buses Cut Fuel Use and CO₂ Emission



White Paper

Connected Digital Signage Delivers Seamless Retail Experience to Combat Showrooming

Technology Focus

Intel 22nm Silvermont Architecture Embedded Intelligence Driven by Low Power SoC

Market Story

Vehicle Mount Computer Manages Volatility in Mining Logistics Services



Dear Partners,

We just passed the Burn-In Test of the history high temperature in Taiwan: 39.3°C! We know there are many other countries or regions over 40°C in these days. The environment is getting worse because of the Green House Effect worldwide. We have consumed too much fossil energy, like coal and gas, which generates too much CO₂.

However, we could be the major contributors to save our Earth with our Intelligent Systems deployed into every corner of the world. With the IoT getting more and more popular, we can remotely access, monitor, fix, or even prevent many events or problems real time without physically going there after disaster happens. Not mentioning the increasing intelligence to analyze the so-called Big Data to manage this world more effectively. It's our mission—and opportunity—to fully utilize our Intelligent Systems in the thousands of applications to make the planet smarter and cooler!

One of the powerful ways is to launch the brand new products with most leading technology---the higher integration with more advanced process, the higher intelligence with lower power consumption, like the 4th gen. Intel® Core™ family process (formerly codenamed Haswell), Intel® Atom™ processor C2358, and future Intel® Atom™ processor and future Intel® Celeron® processor (formerly codenamed Bay Trail) platforms. NEXCOM now is one of the earliest adopters (Intel® EA Program) with many new boards or systems available for mass delivery right after Intel's announcement. As I always mention, Ask NEXCOM, you can get any new Intel platforms you want. Yes, just Ask NEXCOM!

Our full line of IP Cam family is also in mass production already. Several form factors of the NVR platforms, especially the mobile and rackmount ones, are also available for customer's total solutions. IP Cam is the "eye" of every single application in the new connected world!

We also started the bundling automation platforms to provide the customers with the one stop shopping and service to save the huge waste of time and resource in the compatibility and interoperability issues. We put the Windows and RTX together with our NISE fanless PCs for MA, and put the Hilscher fieldbus cards into the brand new NIFE and APPC/IPPC panel PCs for FA. Besides, we leverage the partner's solutions for the vertical automation like robots, laser cutting, etc.

The Earth could not wait any more, and the customer either. As NEXCOM's closest partners, you own the solutions, the channels, and the market. We have to build up the strong business synergy not only between You and NEXCOM, but also among all NEXCOM products. In the 2nd half of 2013, our "solution packages" are growing significantly after the availability of our new product categories in the automation, the IP Cam, the Industrial Wireless with management and security solutions. All these will contribute a lot to the world and the Earth.

We are ready together, to save the Earth, to save ourselves, and at the same time, to have a huge opportunity to create the environment-friendly business!

Clement Lin

A stylized, handwritten signature in black ink, consisting of a large initial 'C' followed by a series of loops and a long horizontal stroke.

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About NEXCOM

Founded in 1992, NEXCOM has five business units which focus on vertical markets across industrial computer, in-vehicle computer, multimedia, network and communication, and intelligent digital security industries. NEXCOM serves its customers worldwide through its subsidiaries in seven major industrial countries. NEXCOM gains stronghold in vertical markets with its industry-leading products including the rugged fanless computer NISE series, the in-vehicle computer VTC series, the network and security appliance NSA series and the digital signage player NDiS series.



NEXCOM Launches A Full Line of IP Cameras

Security surveillance industry has been developing for over 20 years. In decades, it grows fast and the new technologies keep arising. Nowadays, the latest trend is IP network based surveillance system which is replacing the conventional CCTV system gradually. Why IP surveillance becomes a trend? Here are few aspects we can refer to:

- **Capture** – The resolution of IP camera is much better than Analog camera which Megapixel is a basic spec in current market.
- **Transmission** – The data transmission in conventional CCTV is by coaxial cables, but in IP surveillance, it becomes easier which video transmission could be done by any IP based network – LAN, Internet, Wi-Fi, 3G, LTE...
- **Recording** – The back-up recording becomes more and more important for surveillance projects, users ask for 2 or more recording sites simultaneously for certain camera; The conventional CCTV system can only do point-to-point recording by coaxial cable, however, IP surveillance system can easily implement multiple sites recording by IP networks.
- **Installation** – PoE and Wi-Fi technologies simplify the IP camera installations, more cable means more trouble, as well as cost saving by fewer cables.
- **Integration** – As above aspects elaborated, the integration becomes much easier since less cable, and all peripherals integration could be done by IP protocols, ex. access control device, sensor, alarm, POS, ATM...

Therefore, NEXCOM starts to plunge into IP surveillance in 2012, and now, we proudly announce NexCam series IP cameras. There are four product lines:

- **Ultra-low light** – The highest level among all, which is using the Sony Exmor image sensor and focus on the users who require the excellent performance under the low-light environment.
- **Advance Pro** – Equipped with 3MP@30fps/2MP@60fps, which focuses on the clear video quality even the video is paused. This line is perfect for users who need the clear image for identifying.
- **Main Stream** – All cameras reach 3MP@20fps/2MP@30fps and are available in all different housings which can fulfill the needs for different environments.
- **Value Pro** – All cameras reach 2MP@30fps with most competitive pricing, this is the most value for money of 2MP IP cameras.

Not only products, but also solutions! NEXCOM Intelligent Digital Security BU aims to offer vertical IP surveillance solutions in various vertical markets such as bank, car parking, casino, hotel, retail, and vehicle etc. For instance, we can provide complete vehicle IP surveillance solution including mobile IP camera, industrial Wi-Fi, mobile NVR hardware system, vehicle display panels, and video management software from worldwide VMS (video management software) providers.



Freescale and NEXCOM Together Promote World First T4 Series Network Appliance

In early April, NEXCOM announced the world first 1U network security appliance NSA 5640 based on Freescale multicore QorIQ T4240 SoC. This August, Freescale co-works with NEXCOM to promote various hardware development tools including NSA 5640, DNA 2610, and DNA 2620, to its global distributors. This promotional program aims to offer users a fast track in evaluating or developing their own systems or boards.

The network appliances from NEXCOM can interconnect to various types of media streams creating transparent end-to-end path for voice, video and data in corporations and service provider environments. Available in various functionality and sizes, these gateways may include premier bandwidth and codec optimization that reduce costs in the access and core portions of the network. NEXCOM supplies a full suite of products ready to deliver video calls, text messaging and location-based services and many other high-demand services over mobile, VoIP and traditional networks. The network appliances are suitable in SSL VPN, IDP/IPS, VoIP, IVR, Firewall, Web Filter and IMS.




Additionally, NEXCOM offers a full range of network security platforms designed to act as a solid foundation to host VPN as well as load balancing and in IDS/IPS. NEXCOM provides highly secure platforms to ensure your business operation is protected. "The escalating threats to network security have driven network security appliances to exploit highly-integrated multicore architectures. I'd like to highlight NEXCOM NSA 5640, based on the T4240. It is a high-end appliance which can act on unauthorized traffic, malicious activities, spam and malware at Gigabit throughput rate" explained



Hadwin Liu director of product management, NEXCOM Network and Communication Solutions Business Unit.

"Freescale's flagship QorIQ T4240 communications processor is anSoC platform delivering exceptional performance per watt," said Toby Foster, Freescale Senior Product Marketing Manager for T4240. T4240's twelve dual-threaded Power Architecture® e6500 cores running to 1.8GHz and over 50Gb/s of Ethernet connectivity with advanced packet handling acceleration make it a perfect fit for high-performance integrated data and control plane applications. Integrated pattern matching and the security algorithm accelerator benefit applications with high throughput requirements, like NEXCOM NSA 5640. Freescale is pleased to be working with NEXCOM on this project. For more information about FreescaleQorIQ platforms from NEXCOM, please visit www.NEXCOM.com/#QorIQ

Freescale promotes NEXCOM hardware development tools for evaluation/development boards and systems

Offering	Description
 <p>DNA 2610 Desktop appliance, Freescale P1010 processor, 2G WAN and 4GLAN</p>	<ul style="list-style-type: none"> - Freescale P1010 QorIQ processor, 533MHz processor - On board DDR3 1GB memory - Support one mini-PCIe expansion - 2 Giga LAN ports and 4 Giga switch ports - On board 256MB NAND Flash - One LAN port support PoE function
 <p>DNA 2620 Desktop appliance, Freescale P1020 processor, 2G WAN and 4G LAN</p>	<ul style="list-style-type: none"> - Freescale P1020 QorIQ processor, 800MHz processor - On board DDR3 1GB memory - support one mini-PCIe expansion - 2 Giga LAN ports and 4 Giga switch ports - On board 256MB NAND Flash - One LAN port support PoE function
 <p>NSA 5640 1U Rackmount Freescale T4240 processor with 8G LAN and 4x 10G LAN</p>	<p>Designed for advanced Unified Threat Management (UTM) solutions with multi-Gigabit throughput featuring Freescale's QorIQ T4240 24 virtual-core communications processor integrated with DPAA packet handling infrastructure.</p>

2014 Worldwide Trade Shows at A Glance

Month	Exhibitions	Info
1 January	RTECC - Santa Clara	February 4-6, 2014 RAI, Amsterdam, NL Booth # 8H250
2 February	Integrated System Europe	February 4-6, 2014 RAI, Amsterdam, NL Booth # 8H250
	ATX West	February 11-13, 2014 Anaheim Convention Center, Anaheim, CA USA Booth # 4379
	Digital Signage Expo	February 12-13, 2014 Sands Expo Center, Las Vegas, NV USA Booth # 149
	Mobile World Congress	February 24-27, 2014 Fira Gran Via , Barcelona, Spain Booth # 5G27
	RSA Conference	February 24-28, 2014 Moscone Center, San Francisco, CA USA Booth # 738+740
	Embedded World	February 25-27, 2014 Exhibition Centre Nuremberg, Nuremberg, Germany Booth # 2-530
3 March	Secutech	March 19-21, 2014 NanKang Exhibition Center, Taipei, Taiwan Booth # 6209
	Intertraffic	March 25-28, 2014 RAI , Amsterdam, NL
4 April	ISC West (IDS)	April 2-4, 2014 Sands Expo Center, Las Vegas, NV USA Booth # 4044
	Hannover Messe	April 7-11, 2014 Convention Center, Hannover, Germany
	NAFA Institute & Expo	April 8-10, 2014 Minneapolis Convention Center, Minneapolis, MN USA Booth # 708
	SEA JAPAN 2014	April 9-11, 2014 Tokyo Big Sight East, Tokyo, Japan Hall 1-2, Booth # 1E-26
	WasteExpo	April 29-May 1, 2014 Georgia World Congress Center, Atlanta, GA USA Booth # 3131
5 May	ESEC 2014	May 14-16, 2014 Tokyo Big Sight, Tokyo, Japan
	RTECC – Boston	Boston, MA USA
6 June	FOOMA JAPAN	June 11-14, 2014 Tokyo Big Sight East, Tokyo, Japan
	IFSEC International	June 17- 19, 2014 ExCeL London, United Kingdom Booth # B1375
7 July	Semicon West	July 8-10, 2014 Moscone Center, San Francisco, CA USA Booth # 6171
9 September	InnoTrans	September 23-26, 2014 Messe Berlin, Berlin, Germany
	ASIS	McCdrmic Place, Chicago, IL USA
	RTECC – Toronto	Toronto, Ontario Canada
10 October	American Public Transportation Association	October 13-15, 2014 George R. Brown Convention Center, Houston, TX USA Booth # 5400
	RTECC – San Diego	San Diego, CA USA

Intel 22nm Silvermont Architecture Embedded Intelligence Driven by Low Power SoC

The vision of an intelligence future requires intelligence to be embedded everywhere. To this end, NEXCOM has developed a diverse array of products based on Intel® Celeron® and Atom™ processors E3800 product family, aimed to bring the intelligence to embedded applications, including medical imaging, industrial automation, fleet management, multimedia interaction, and network security.

3.5" Board EBC 355

The EBC 355 series of 3.5" boards are aimed at embedded applications that require a fanless and energy efficient platform with enhanced computing and graphics capabilities. Based on Intel® Atom™ processor E3800 product family, the 3.5" boards feature four USB 3.0 ports, two SATA II interfaces, display outputs of VGA, HDMI and LVDS, and a maximum memory of 8GB DDR3 SDRAM. Available in two models, the standard and the wide temperature version, the EBC 355 series is ideal for portable devices, multimedia HMI panels, outdoor systems, home automation and thin clients.



Fanless Computer NISE 105

The fanless computer NISE 105 is designed to construct IP-based intelligent systems for the connected factory. The NISE 105 offers excellent performance per watt, full HD 1080p capability, rich connectivity interfaces and high reliability even operating in temperature extremes. Furthermore, the NISE 105 has a small footprint and is designed for easy installation and maintenance. This fanless computer can fulfill needs of various factory

automation applications ranging from data acquisition server for big data analytics to high-level PC-based automation controller.



In-vehicle Computer VTC 1010

The in-vehicle computer VTC 1010 provides the performance, reliability and scalability required to build a connected vehicle that can address the needs of fleet management. The VTC 1010 features wide operating temperature range, dual WWAN and SIM, built-in GPS with optional dead-reckoning, intelligent vehicle power management and four mini-PCIe expansions. The VTC 1010 can deliver the telematics technology for real-time voice and data communication, vehicle tracking and navigation, mobile video surveillance as well as in-vehicle infotainment.



1080P Media Player NDiS M323

The NDiS M323 is a cost-effective OPS-compliant 1080P media player that integrates advanced graphics capability and remote manageability, bringing budget users the

premium features mostly found on premium-priced players. Based on the Intel® Celeron® Processor J1900, the NDiS M323 features quad-core x86 processor, accelerated multimedia performance, OPS-compliant form factor, remote maintenance and repair function, and peripheral expansion. This OPS media player is designed to facilitate the adoption and management of interactive media solutions ranging from digital signage to digital whiteboard.



Desktop Security Hardware DNA 120

The desktop security hardware DNA 120 supports Intel® Advanced Encryption Standard (Intel® AES) to provide secured network communication for small and home office networks. The palm-size DNA 120 based on Intel® Atom™ processor E3815 integrates Intel® Advanced Encryption Standard, four LAN ports and Wi-Fi expansions. This fanless desktop security hardware can provide reliable network connectivity to transmit encrypted data over secure communication channels and block unauthorized network access, protecting both wired and mobile internet devices in the workplace from network security threats.



Intel 22nm Silvermont Architecture at a Glance

- **Low Power SoC** allows embedded systems to use so little power that it can last long on battery and reduce the risk of overheating.
- **Integrated Intel® Gen 7 Graphics** integrates new architecture and visual technologies to deliver much more sophisticated images at a faster pace on two independent displays with DirectX® 11 and OpenCL support.
- **Wide Temperature Support** enables embedded systems to effectively work in extreme of temperatures, bring intelligence.

Connected Digital Signage Delivers Seamless Retail Experience to Combat Showrooming

Although online shopping provides convenience to customers, brick-and-mortar stores still offer richer retail experiences that online stores cannot provide, such as exclusive in-store services and hands-on experiences where customers can see and touch actual products before purchasing. However, physical stores today face the challenge of showrooming, a growing trend where customers visit a store to see a product and then buy it for a better price online using their smartphones or other connected devices. To promote in-store sales and combat showrooming, digital signage can be used to build a connected store providing a unique shopping experience that can attract, engage and entice customers to make purchases on the spot.

This white paper details how NEXCOM's NDiS B533 digital signage player can help combat showrooming. It will also highlight how the improvements in the graphics, multi-media and computing performance of 4th generation Intel® Core™ processors help digital signage deliver a visual feast for the eye, provide customized messages based on viewer's demographics, and offer compelling, interactive experiences in the store. In addition, the white paper will illustrate how Intel® Advanced Encryption Standard (AES) New Instructions (Intel® AES-NI) and Intel® Trusted Execution Technology (Intel® TXT) provide security for digital signage, and how Intel® Active Management Technology (Intel® AMT) technology simplifies post-implementation operation and maintenance of a large scale digital signage network.

Connected Digital Signage Provides Intelligent Interaction

In high-traffic retail environments, retailers need to design their storefronts to attract and welcome passersby, increase in-store visits, and boost sales. Storefront digital signage provides the perfect solution for impressing, entertaining, and encouraging passersby to come inside.



Figure 1. NDiS B533 based on 4th Gen. Intel® Core™ processors can help combat showrooming.



Figure 2. Storefront displays require a highly integrated digital signage player that can provide high resolution video output and multiple display outputs.

For storefront applications, the industry typically recommends large-screen digital signage, often over 40 inches in size or even sizes comparable to a human's height, and a range of interactive features to create strong visual presence and stand out in high-traffic environments. Such storefront displays require a highly integrated digital signage player that is compatible with various large displays, provides high resolution video output, as well as multiple display outputs, and can interface with sensors, audio and cameras so a virtual storefront staff that can detect passersby and greet them with audio to capture their attention.

In other areas of the store, to enhance the shopping experience and combat showrooming, retailers need a digital signage that can deliver personalized content, context-aware advertising, inventory integration, point-of-sale (POS) capabilities, and the ability to engage customers through touch screens and gesture recognition. This requires a digital signage player with high computing performance capable of processing the context and visual data needed for audience detection, gesture recognition and context awareness. It also requires a solution capable of secure connectivity to the back end to enable a digital sign to tell a customer other store locations where an out-of-stock item at a particular store can be found and bought immediately for instant gratification—a key advantage of physical stores. Such connectivity can also enable Internet-like shopping experiences that allow a

customer to access product recommendations, reviews, companion product suggestions, and shipping options for items not in the store or that a customer want to send as a gift.

To answer these technological needs, NEXCOM's NDiS B533 is built with 4th generation Intel® Core™ i7-4770TE processor. The 4th generation Intel Core processor family delivers significant improvements in computing, graphics and media performance. Processor performance is up to 13% faster than previous generation processors and comes with Intel Advanced Vector Extension 2 (Intel AVX 2.0), which greatly benefits image and video processing applications. Compute-intensive applications such as anonymous video analytics (AVA) and gesture controls can process software algorithms faster for audience detection and gesture recognition to respond to the real-time needs of customers and ensure more responsive experiences.

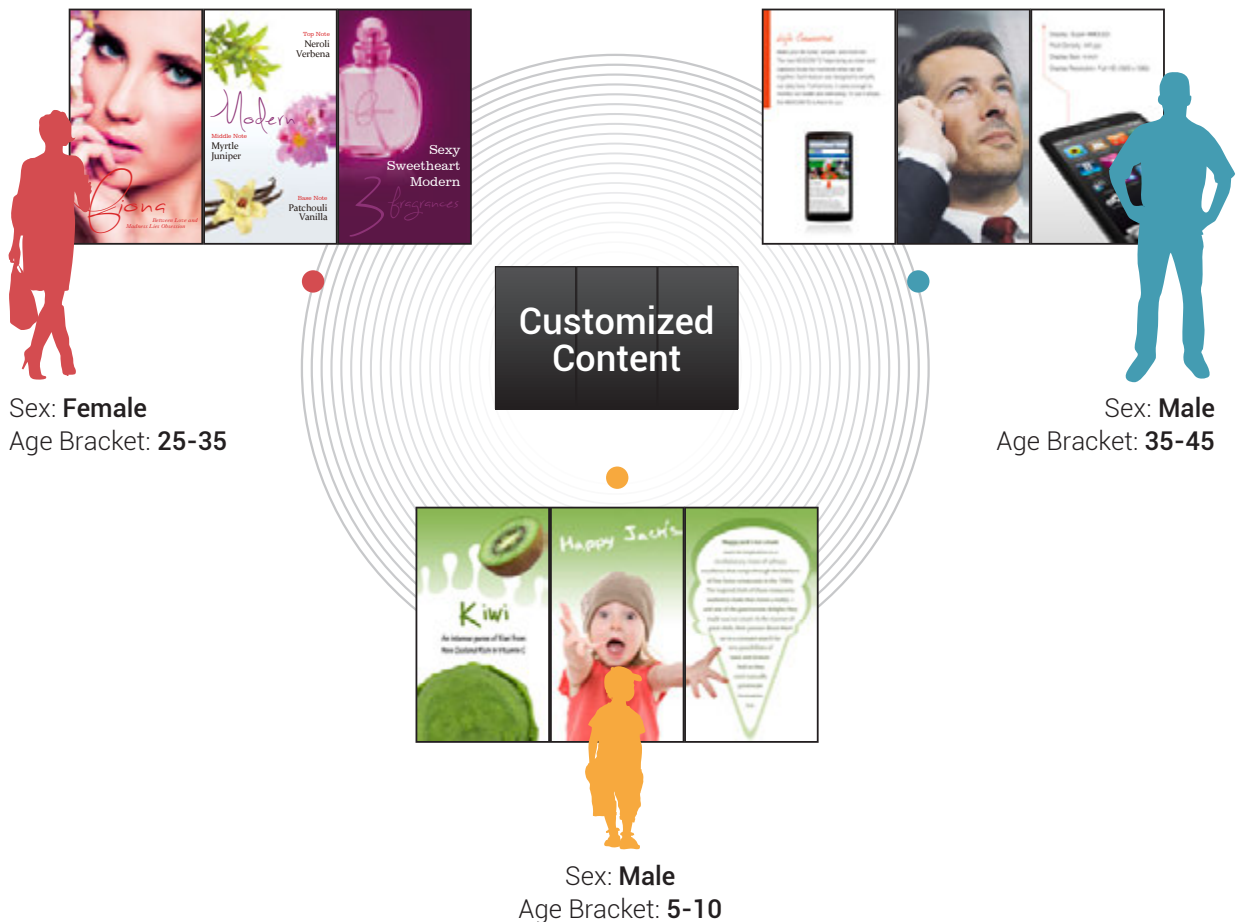


Figure 3. Retailers can use AVA to analyze the gender and age bracket of a customer and display targeted advertisements.

The graphic performance of the 4th generation Intel Core processor family surpasses the previous generation by up to 24%, and includes significant graphics and media enhancements. Based on the integrated Intel® HD Graphics 4600, the NDiS B533 supports 4K resolution with DirectX® 11.1 and OpenGL 4.3 graphics to deliver engaging, high impact visuals. The NDiS B533 also benefits from Intel® Clear Video HD technology, which provides full hardware-accelerated video decoding, to enhance the live streaming experience for customers.

For instance, clothing retailers can use AVA—powered by software such as Intel® Audience Impression Metrics Suite (Intel® AIM Suite)—to analyze the gender and age bracket of a customer and display targeted advertisements, such as women’s clothing for female shoppers or children’s wear for kids. It can also display advertisements based on current weather conditions, such as rainwear or raingear during rainy days. Furthermore, equipped with touch screens and gesture recognition systems, digital signage inside a store can function

as a virtual fitting room allowing customers to choose and try on clothes in front of the digital signage for faster buying decisions.

In pharmacies, it is crucial that licensed pharmacists be available to answer inquiries about drugstore items or prescriptions and help customer with purchase decisions. If they are occupied, digital signage can act as a virtual assistant by providing live video chat services and recorded messages to customers. In addition, digital signage can incorporate barcode scanners or radio frequency identification (RFID) sensors to work with a RFID-tagged product, allowing customers to access detailed product information.

In grocery stores, digital signage connected to the inventory system can dynamically change its content to promote overstocked items. For out-of-stock items, digital signage can end the advertisements or notify customers on other store locations where the items can be bought. Combined with the data gathered by AVA, digital signage can deliver personalized incentives on items likely to appeal to a

customers' gender and age bracket, helping to increase in-store sales. Furthermore, to empower customers to make purchases quickly during peak hours, digital signage with barcode scanners and/or RFID capabilities, near field communication (NFC)—a standard feature of 4th generation Intel Core processors—and credit card readers enables customers to purchase items right at the digital sign.

Securely Monitor, Manage and Protect a Connected Digital Signage Network

In a large retail network of up to thousands of connected devices, digital signage can face a number of network-based security threats. Threats that aim to hack the digital signage and steal or change sensitive data, or attempt to disrupt system operation can impact a retailers' brand image and cause downtime.

For example, a hacker intercepting communication between a content management server (CMS) and a digital signage can potentially steal valuable copyrighted content. Sensitive payment information from credit cards processed by the digital signage may also be captured when a communication link is compromised or the digital sign is hacked. Furthermore, a hacker gaining control of digital

signage can alter it to display inappropriate content.

These threats require a digital signage player that can provide hardware-enhanced security and remote manageability with out-of-band capabilities. To provide these features, NDiS B533 utilizes Intel AES-NI, Intel TXT and Intel AMT.

Intel AES-NI is a set of instructions designed to enhance the performance of AES encryption and decryption. Using Intel AES-NI, NDiS B533 can protect valuable content and sensitive payment information—transferred or stored locally—from malicious access. New instructions in Intel AES-NI enable faster hardware-based encryption and decryption, providing up to 10 times performance over software-based encryption, freeing the processor from additional computing effort so there is virtually no impact on signage performance.

To enhance secure operation of digital signage and prevent system compromise, NDiS B533 supports a trusted platform module (TPM) for Intel® TXT. Intel TXT, a hardware-based security technology, protects the system from software-based attacks that exploit the vulnerabilities of the applications that execute during system boot, such as the BIOS, firmware, operating system, and other software. Using Intel TXT,

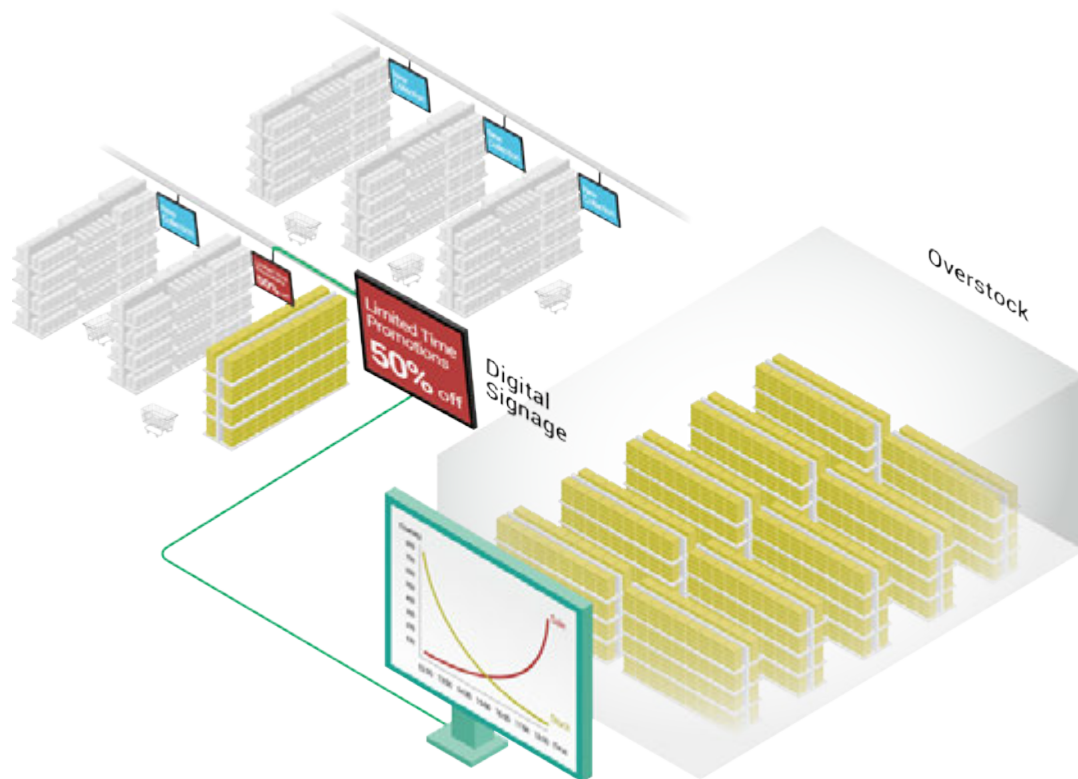


Figure 4. Digital signage connected to the inventory system can dynamically change its content to promote overstocked items.

NDiS B533 can ensure that it is running on a trusted platform and secured from hackers attempting to override the control of the digital signage.

To simplify remote management and respond to downtime events quickly in a large retail network, Intel AMT technology provides out-of-band remote management with flexible provisioning features. Supporting Intel AMT technology, NDiS B533 can be tracked, monitored and managed through a single management platform. With out-of-band capabilities and Keyboard-Video-Mouse (KVM) support, Intel AMT can enable technicians to control the keyboard and mouse of the remote device even when it is powered off, as well as view the contents of the remote display, giving full control

and visibility of the remote device to streamline the troubleshooting process and minimize on-site visits.

Conclusion

Designed for high performance, the NDiS B533 signage player featuring the 4th generation Intel Core i7-4770TE processor provides retailers with a powerful solution for creating a compelling and personalized shopping experience that can help combat showrooming. The NDiS B533, using Intel AES-NI, Intel TXT and Intel AMT technologies, enables high availability while delivering robust security and remote manageability to help retailers overcome the challenges faced in deploying a large-scale digital signage network.

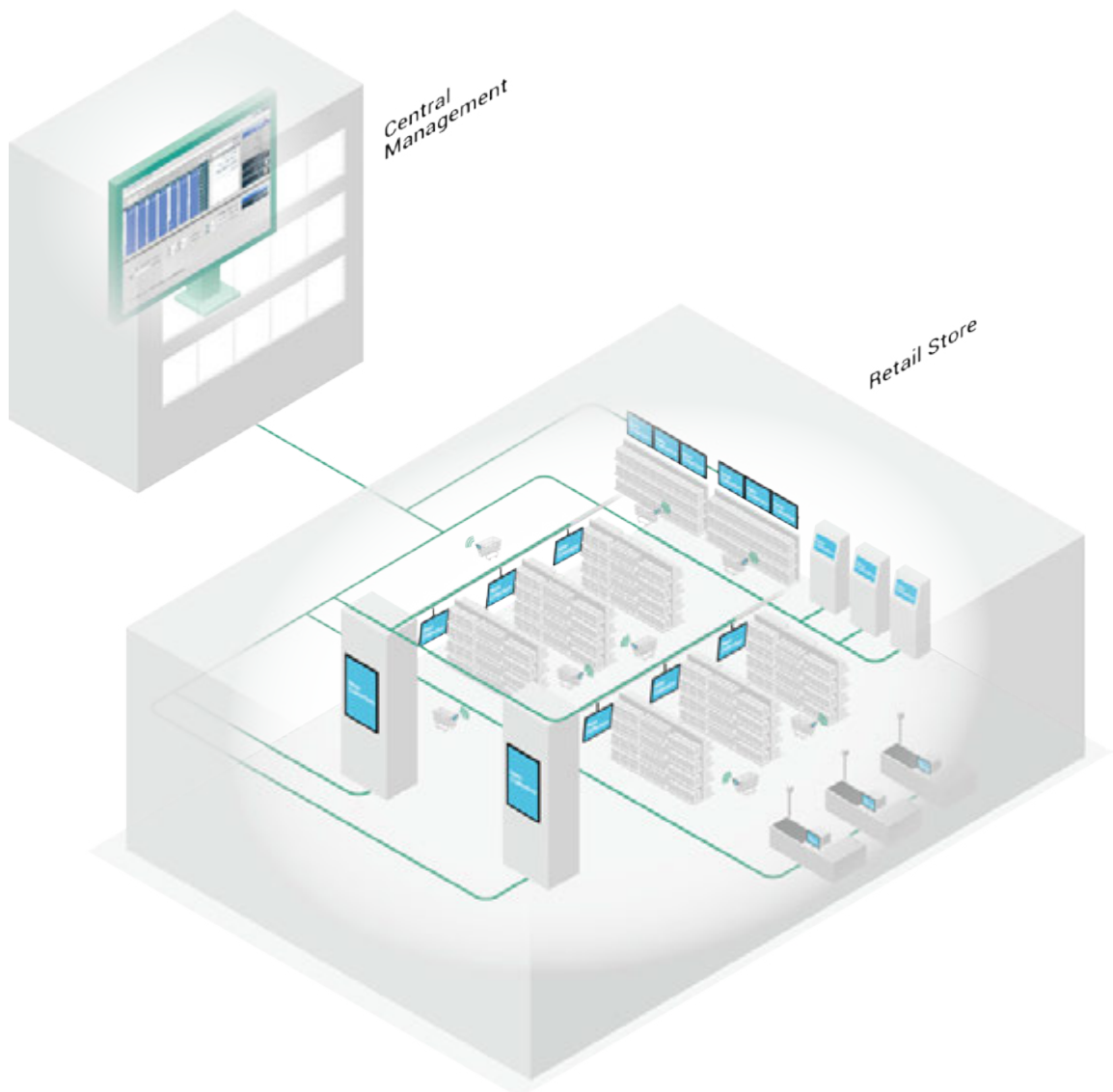


Figure 5. Intel AMT technology provides out-of-band remote management with flexible provisioning features to simplify management.

Digital Network Fuels Opportunities in Vehicle Surveillance Market



The security surveillance has risen in importance since the September 11 attack. For example, the security surveillance has been applied to traffic control to homeland security in vehicles. Now, the demand for high resolution and intelligent video analytics are growing; the design of the products is shifted from general-purpose towards specialization for vertical applications; IP surveillance is emerging as mainstream and gradually replacing traditional analog CCTV and DVR systems.

IP surveillance is becoming mainstream because it surpasses CCTV

and DVR systems in many ways. NEXCOM General Manager of Intelligent Digital Security Business Unit, Steve Yang, explains that by digitizing analog signals, IP surveillance can achieve higher resolutions and perform intelligent video analytics, and by integrating network structure, IP surveillance allows monitoring and data storage across multiple locations as well as centralized management of thousands of IP cameras. Yang also highlighted that to seize opportunities and succeed in the vehicle surveillance industry it is essential to address the aspects of video capture, transmission, recording, monitoring, system integration and centralized management.



A Thoughtful Capture of High-Res Video is Key to Fast-Changing Vehicle Environments

Image clarity is the primary criterion for video capture. Therefore, IP cameras need to support high resolutions and high frame rates with visual enhancement technologies including image stabilization and Wide Dynamic Range (WDR) in order to deliver clear and smooth images to assist the process of video analytics. As technology advances, various IP cameras are supporting single-digit or even double-digit megapixel resolutions, well exceeding the sub-megapixel range (0.38 to 0.4) provided by traditional analog cameras, making IP cameras the ideal choice for surveillance.

The variable nature of vehicle environments also poses several challenges for video capture. For example, if a vehicle is moving at a fast speed and captured at a low frame rate, the on-screen motion will appear choppy. "In vehicle surveillance applications, 60 FPS is recommended over 30 FPS for smooth playback," Yang states. Another challenge that IP cameras need to overcome is camera shake caused by vehicle movements. To reduce camera shake, IP cameras require intelligent analysis that uses image stabilizing algorithms to detect and reduce horizontal and vertical movements.

In addition, as the vehicle's exterior and interior are exposed to high and low lighting

levels, some areas within the camera's field of view may be too bright or dark for optimum viewing. Cameras supporting WDR can resolve this issue. "Using a combination of long and short exposures, WDR reduces the brightness of the background to ensure that the subject in front is clear, while balancing excessively dark and low areas to an optimal contrast ratio. Compared to DWDR (Digital Wide Dynamic Range), WDR produces sharper, clearer images," Yang explains.

Digital Network Helps Piece Together a Complete Vehicle Surveillance Solution

When it comes to transmission, recording and monitoring, vehicle surveillance requires high mobility to adapt to its application environment. Traditional analog systems rely on coaxial cables to transmit camera footage to DVR systems for recording. However, as the transmission distance is limited by the length of the coaxial cables, the footage can only be monitored and recorded from a single location. IP surveillance, on the other hand, uses Internet Protocol (IP) to transmit video stream over the "boundless" internet, allowing for remote backup and real-time view of video across multiple areas.

Furthermore, vehicle surveillance can incorporate Wi-Fi access point to reduce cabling and simplify system setup, or integrate in-vehicle computers to collect vehicle information and capture surveillance

footage. The data are then uploaded to the backend central management system (CMS) to give the security personnel a clear, real-time view of the monitored area and detailed information about the vehicle, allowing them to gain a better control of the situation at hand.

In terms of surveillance management, traditional analog-based systems rely on DVR to digitize and compress analog footage before it can be used for video analytics, not only does this place stress on the DVR system and cause a delay in video, but also a delay in the alarm system or other reactive security measures. In contrast, IP cameras are equipped with built-in video analytics to assist the system in identifying abnormal events, offloading workload from the backend system to ensure more timely alarm notification and faster video retrieval.

The need of vehicle surveillance is prevalent in various transportations. Yang points out that public transits such as buses, trains and school buses can use vehicle surveillance to monitor entering and exiting passengers, activities in the vehicle and blind spots in the side-view mirrors to prevent graffiti, harassment and theft, improving passenger transport safety. In addition, the speed and route of vehicles can be closely monitored and recorded to detect and prevent improper driving behavior. In law enforcement, vehicle surveillance can monitor the police enforcement process, or use video recordings as evidence for prosecutors to press charges. Moreover, in the event of police-citizen disputes, the recordings can be used to recall the actual scene, providing concrete evidence to justify conflicts.

With a long established experience in all types of vehicle environment, NEXCOM offers a comprehensive solution including IP cameras, video recording systems, GPS and industrial grade Wi-Fi access points, to meet all types of surveillance needs.

Industrial Firewalls Ward Off Cyber Attacks, Keep Industrial Process Control Networks Secure

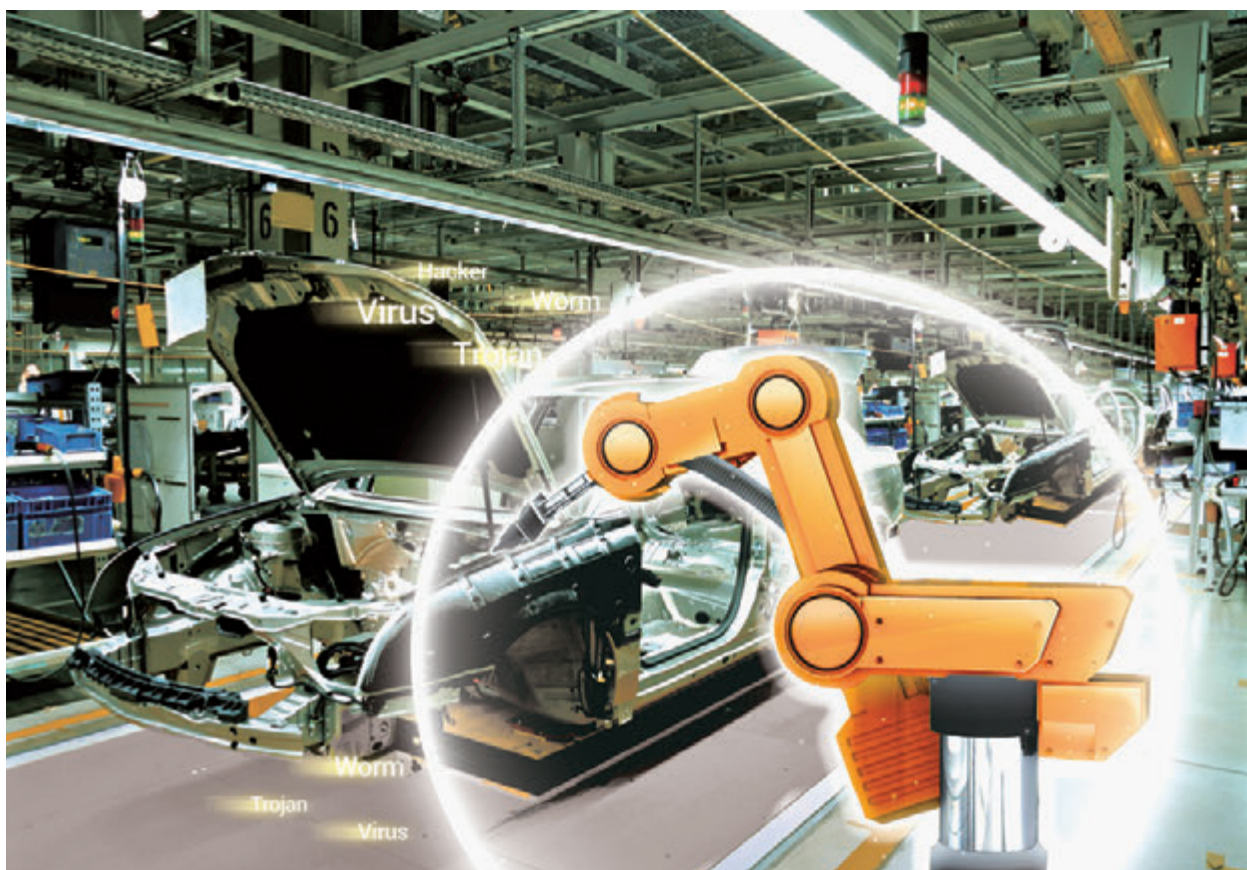
As industrial automation adopts an Ethernet-based network, production processes in factories can achieve intelligent manufacturing and benefit from real-time monitoring and remote management. However, these benefits also introduce new security loopholes for industrial process control networks, increasing their vulnerability against cyber attacks. Therefore, establishing a protection mechanism for industrial process control networks has become imperative.

In the past, industrial process control networks used proprietary protocols and were isolated from the public network. The advent of intelligent manufacturing, along with the proliferation and cost reduction of Ethernet and networking, industrial process control

networks are gradually converging to Ethernet-based open networks. However, once industrial process control networks are exposed to the public network, security loopholes may be exploited. To prevent production lines from malicious interference, industrial process control networks require protection by industrial firewalls.

Safeguard Industrial Process Control Networks with Deep Packet Inspection

Although commercial firewall technology has advanced significantly and received widespread adoption throughout the years, they are not designed to protect industrial process control networks. Due to the application differences between a commercial and industrial process



control network, it requires an industrial firewall to secure sensitive and critical data exchanged in industrial process control networks and provide a deeper level of management and protection of nodes," explained Hadwin Liu, director of product management, NEXCOM's Network and Communication Solutions Business Unit.

Liu further explains that the enterprise network is made up of three layers, which are intranet, plant network and industrial process control network, or process control network for short. Industrial firewalls' main purpose is to protect the industrial process control network, which monitors and controls all the internal nodes and ensures that all the nodes are functioning in optimal condition. Although the network bandwidth at this level is not excessively demanding, the transmitted data is highly valuable, such as monitoring variables used to assess the level of alkalinity in wastewater treatment plants, or control variables used to control industrial robots in factories. Therefore, industrial firewalls need to support various Fieldbus protocols such as PROFINET, as well as provide deep packet inspection in order to inspect and analyse the header and payload encapsulated at different layers of the packet to ensure integrity.

In contrast, commercial firewalls do not support Fieldbus protocols and they focus on inspecting packets that are based on common communication protocols such as email, file transfer and web browsing, making them unsuitable for industrial process control networks.

For example, at an automotive assembly line, the industrial robots function as network nodes that operate according to the control command received. If the packets sent to them contain suspicious instructions, such as instructing the industrial robots to perform actions that are not part of the standard operating procedures, the automotive manufacturer may suffer huge financial losses due to the mass production of inferior products caused by compromised nodes. By incorporating industrial firewalls, any suspicious packets can be identified and blocked, preventing the control command from being tampered with and ensuring the industrial robots are operating as programmed at all times.

The security of industrial process control networks is strictly managed due to the specialized nature of the production nodes. Since these nodes only execute a limited set of applications, industrial firewalls use a whitelist to specify which applications can traverse in and out of the network, while blocking all others. Commercial firewalls, on the other hand, use a blacklist to provide security at the entry point of the company's network, and will only block applications specified in the list. Hence, industrial firewalls are more effective at protecting industrial process control networks.

In addition to a whitelist, virtual private network (VPN) is also another important feature for industrial firewalls. As industrial process control networks are converging to Ethernet, information will be exchanged in an open network environment. To ensure the information received from a remote site is complete and authentic, VPN will create a private channel on the public network and encrypt all the information within, even if the data is eavesdropped during transmission, the data will be difficult to decrypt and tamper with.



Delivering Uninterrupted Production in Harsh Environments

There exists a diverse range of industrial automation applications, such as oil fields in hot deserts, steel plants that are exposed to scorching heat and wind farms in salt fog environments. To withstand these extremities, industrial firewalls require a rigid and robust design to maintain reliable operation under high temperature, high humidity and high salt environments. Moreover, a heavy emphasis on stability with low or no downtime is required from each production node especially during critical production processes. Thus, industrial firewalls must provide high availability by featuring redundant mechanism that can resume operation within a short amount of time to provide constant protection of the industrial process control network.

Using Ethernet, intelligent factories are able to monitor and manage the entire plant operation from a remote location in real time. From a managerial point of view, Ethernet-based intelligent factory is a valuable asset to improving a business' manufacturing and management efficiencies. However, from a security point of view, any security breaches cannot be tolerated. Ever since the cyber attack on Iran's nuclear power plant in 2010, industrial users have realized the importance of industrial process control network security. In the quest of protecting the value of production nodes, industrial firewalls are recognized as the key solution. With great development potential, the future of industrial firewalls is bright ahead.

Vehicle Mount Computer Manages Volatility in Mining Logistics Services

NEXCOM all-in-one vehicle mount computer VMC 3000 is installed in tank trucks to optimize mining logistics service by managing the volatile working conditions. With orders, vehicle, traffic and weather information gathered and shared in real time among drivers and dispatchers, the mining logistics service can deliver required material to mining sites in an efficient, safe and eco-friendly manner.

As drivers drive uphill and downhill in Appalachian Mountains to transport water, sand and chemicals to mining sites, traveling alongside is a total tracking system built with the vehicle mount computer VMC 3000. In the cabin, this total tracking system allows drivers to communicate with dispatchers, take the shortest and quickest route, receive new assignments, print shipping documents, check vehicle status and tank volume, prevent material spills with real time monitoring, and get weather alert.

In the meanwhile, the information is also

shared with dispatchers, who can therefore track vehicle and freight locations; assign new orders to appropriate drivers; keep order reports up-to-date; remotely regulate the traffic on mining sites; detect anomaly vehicle maneuver and offer assistance in case of an vehicle accident. Moreover, the total tracking system is integrated with dashboard and cabin cameras for traffic and driver monitoring and streams live videos to the dispatch center if requested.

With all the information, the total tracking system can optimize the mining logistics service by reducing fuel consumption and shortening transportation time. The system can also increase safety by encouraging traffic regulation compliance with daily operation monitoring; replacing onsite flagmen with remotely-managed traffic signal systems; and preparing drivers for different weathers at different altitudes. Better still, the environment can be protected when the no-spill policy can be effectively enforced with visual aid.

The total tracking system is made possible by the combination of NEXCOM all-in-one vehicle mount computer VMC 3000 and Red Dog Logistic software. The VMC 3000 is a ruggedized computer, featuring a 10.4" touch screen, GPS, Wi-Fi and 3G connection as well as abundant I/O interfaces. This one-piece heavy-duty design, which is highly praised by the Red Dog Logistics, not only lays the solid cornerstone for vehicle data logging, location-based functions, communication, video storage; it also keeps the cabin neat and tidy when working in conjunction with peripherals, including thermal printer, cameras, tank measure sensor, and RFID reader for driver login.

Combining Red Dog Logistic software, which consists of a user interface, web-based backend server, and relational database, the data amassed by the VMC 3000 can turn into aggregate reports, based on which business insight can be applied to help the mining logistics service driving into higher gear.



NEXCOM In-vehicle Computers Help Local Electric Buses Cut Fuel Use and CO₂ Emission

The electric buses installed with NEXCOM in-vehicle computers are running in downtown and suburban areas in Japan, aimed to cut fuel consumption and reduce carbon dioxide (CO₂) emissions. Saddled with rising greenhouse gas emissions and high fuel costs, some prefectural governments see the electric buses as an eco-friendly public transportation that can ease local traffic and economy woes.

The electric buses rely on pre-charged batteries to shuttle back and forth throughout the day. The less energy they use, the longer they can continue to service. Therefore, efficient energy usage is one of the most important subjects in electric bus application. The use of computer technology can greatly improve and optimize the energy usage, allowing real-time closed-loop control and monitoring of the battery and the engine, the environmental control equipment and other onboard audio and video devices.

NEXCOM in-vehicle computers VTC 7110 and VTC 1000 feature CAN bus protocol support, 3G connection, GPS tracking and navigation and powerful graphics capability. Integrated with

Aptpod's telematics software, the VTC 7110 and VTC 1000 are powerful in-vehicle computing solution selected by Tokyo R&D to achieve the goal of providing a safe, reliable, enjoyable, and green transit service for its newly developed large and middle-sized electric buses.

When the electric buses are in transit, the VTC 1000 in-vehicle computers collect data from hundreds of sensors every few milliseconds (ms) and interpret the data into driving speed, bus location, battery discharge rate, battery energy level etc. The in-vehicle computers pack the interpreted data and send it to a cloud server over the air. All the vehicle data can be accessed from anywhere, anytime with a web browser and internet connection.



On buses with passenger information display systems, the VTC 7110 is used to keep passengers informed of their whereabouts, estimated arrival time at the next stop, nearby shops and point of interest, all shown on the Google Map™. Passengers are also made aware of the amount of CO₂ reduced by taking electric buses.

In Okinawa, the traffic in the south continues to build up as the tourism industry steadily grows, which is a major contributing factor to greenhouse gas emission. Similarly, Tokunoshima's vehicle per capita is so high as to not only raise environmental concerns but also doom the local economy because the fuel is more expensive on outlying islands than on the mainland Japan. Meanwhile, Akita is seeking a greener alternative to help locals comfortably commute between suburbs even in cold snowy winters.

Driven by one reason or another, these prefectural governments all take the same approach to improve the situation, putting electric buses on the road.

About Tokyo R&D, please visit www.tr-d.co.jp



The 19 Must Have Products!

1 APPC 1232T/ 1237T/ 1532T/ 1732T/ 1932T Industrial Fieldbus Panel PC Compatible to World Most PLCs

Integrated Hilscher fieldbus technology, NEXCOM Applied Panel PCs now can connect to programmable logic controllers (PLCs) and remote I/O to perform as SCADA/HMI workstations. The APPC series integrates widely-used industrial master fieldbus interfaces, including PROFINET, PROFIBUS, DeviceNet, Ethernet/IP and EtherCAT. FBI, the mini-PCIe FieldBus Interface module, makes APPC control platform fully

compatible with Siemens, Allen-Bradley, Beckhoff network systems.

The latest APPC 1932T series provides two RS232/422/485 ports (COM1/COM2) and four channels of DI/O which offer 2.5KV isolated protection. In addition, APPC 1932T series can provide LED panel's brightness adjustment by backlight control buttons.



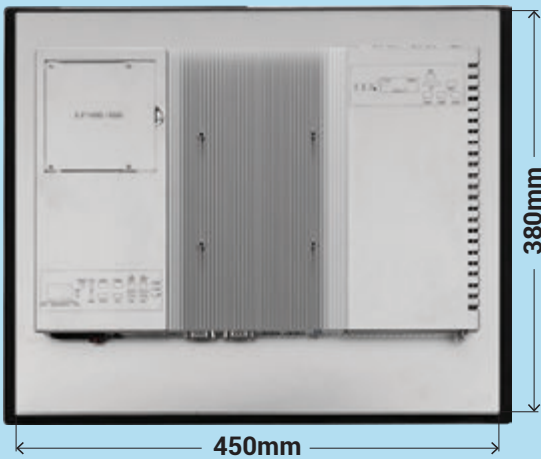
Mini-PCIe Fieldbus Interface Module Selection Table

Photo	Model	Protocol	Connector
	FBI90E-PNM	PROFINET Master	Dual RJ-45
	FBI90E-EP	Ethernet/IP Master	
	FBI90E-ECM	EtherCAT Master	
	FBI90E-PBM	PROFIBUS Master	DB9
	FBI90E-DNM	DeviceNet Master	5-pins Phoenix Contact Terminal

2 IPPC 1960T Series

Heavy Industrial Panel PC Born for Working in Harsh Environment

IPPC 1960T series heavy industrial panel PCs are specially designed for harsh environments. IPPC 1960T series features NEMA4/IP66 rated front bezel, rugged chassis and powerful 2nd/3rd generation Intel® Core™ family processors for heavy industrial applications. In addition, rich capacity of multiple I/O interface and expansion slots allow the IPPC 1960T to connect to various external devices and peripherals to meet different application requirements. To sum up, there are five reasons that you would select IPPC 1960T series for heavy industrial applications:



IPPC 1960T series has the same cut-out size as Siemens SIMATIC Panel PC

Feature 1: Less Cost Yet Upgrading Solution

IPPC 1960T delivers irresistible CP value. It has the same cut-out size and premium quality as SIMATIC Panel PC, but 50% less in price. This offers users less cost yet upgrading solution!

Feature 2: Protection against Daily Corrosion and Chemicals

The neat and sleek design of IPPC series with printing aluminum front bezel and USB cover is not only stylish, but protects the IPPC from daily corrosion and chemicals. IP66 grade front bezel further



IPPC features anti-corrosive and chemical resistant aluminum front bezel to meet heavy-duty applications. The "front USB" connector offers easy access for data acquisition

provides dustproof and waterproof protection. The "front USB" connector features IP67-rated protection, and offers users easy access for data acquisition. The thorough protection makes IPPC series easy to clean in high sanitary demand applications. No matter for industrial applications or for food & beverage industries, IPPC 1960T series allows users to daily flush front panel.

Feature 3: An Array of I/O and COM Ports

IPPC 1960T possesses two expansion slots and two mini-PCIe sockets. Two expansion slots are designed for capture card, data acquisition and control card, motion control card, communication card or fieldbus card. The combination of two expansion slots can be 1x PCI and 1x PCIe x4, 2x PCIe x4, or 2x PCI upon users' requests. The two mini-PCIe sockets can be configured for Wi-Fi, 3.5G or NEXCOM's fieldbus module. The unique feature is that IPPC 1960T series is a fieldbus-enabled system compatible with EtherCAT, ProfiNET, Profibus, DeviceNet, and Ethernet/IP to fulfill the control demands from machine automation and factory automation market.

Feature 4: Systematic Design

The IPPC 1960T series consists of IPC60T box PC, and LCD kit. NEXCOM can either offer complete all-in-one platform or deliver in terms of LCD kit and PC box for users to implement under any space conditions.

Feature 5: Quietly Powerful System

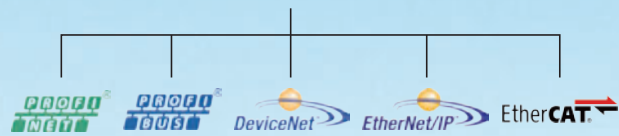
IPPC 1960T series features include:

- Fanless design can support 2nd/3rd generation Intel® Core™ i3/i5 processors
- Powerful onboard HD graphics integrated into the CPU
- 4GB DDR3 memory, up to 8GB DDR3-1066/1333
- Dual GbE, 2nd display-VGA, Line-in, Line-out, MIC-in, PS2 KB/MS
- 4x USB2.0/ 1x CFAST/ 6x COM ports/ 1x LPT/ 4x4 GPI/O/ 4x4 DI/O
- 3 panel backlight buttons to increase, decrease and turn on/off the backlight
- Offer 100-240V AC power input or wide 9-30V DC power input

Model Name	Description
IPPC 1960TP2E-DC	Fanless 19" SXGA LED backlight touch Panel PC, Intel® Core™ i5-3610ME 2.7GHz, touch screen, 4GB DDR3, 1RS232, 2xRS232/422/485, 9-30VDC power input
IPPC 1960TP2E-AC	Fanless 19" SXGA LED backlight touch Panel PC, Intel® Core™ i5-3610ME 2.7GHz, touch screen, 4GB DDR3, 4xRS232, 4x4 GPIO, 4x4 DI/O and 2xRS232/422/485 with isolated protection, 100~240VAC power input, brightness adjustment buttons



Integrated Industrial FieldBus Solutions



3 HWF 1310 Ready-to-go Hotspot Wi-Fi Turnkey Solution

Offering wireless connectivity in public locations, such as coffee shops, restaurants, hotels, convention centers, airport terminals, becomes a must in hospitality service industry. In respond to the demand, NEXCOM provides ready-to-go and easy set-up Hotspot Wi-Fi solution (HWF) including access management AP and ticketing generator.

The HWF management solution is designed to provide superior Wi-Fi bandwidth for classified membership by own defined flexible policies in term of rate, hour, and priority. Once customers experience the good connectivity, they will stay long hours online. This can enhance customers' royalty toward hospitality service providers, and eventually help business in growth.

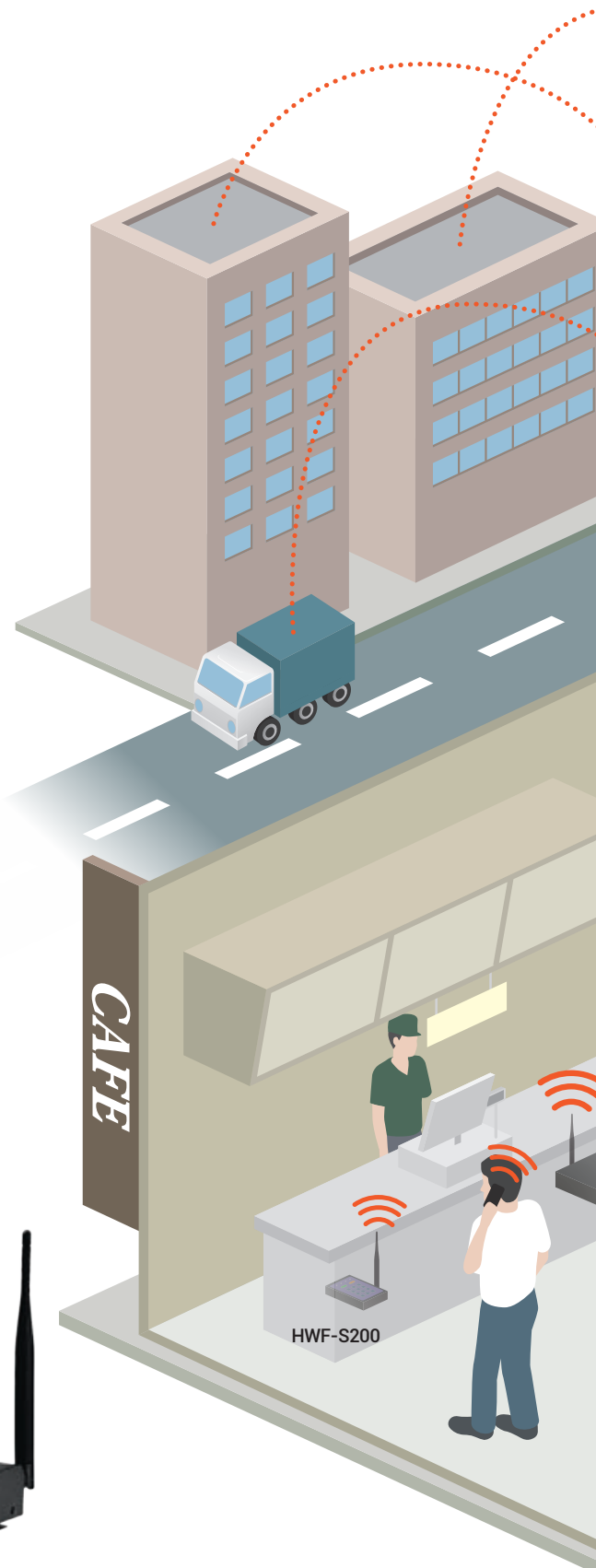
NEXCOM HWF 1310 is a ready-to-sue turnkey solution which includes access management AP, generator for multiple access policy and fare, and thermal printer. The access management covers multiple fare, guest policy and roaming across different sites. In addition, the HWF 1310 is capable to mange 2000 on-demand accounts and 500 local accounts. It overcomes the account management challenge in hotspots.

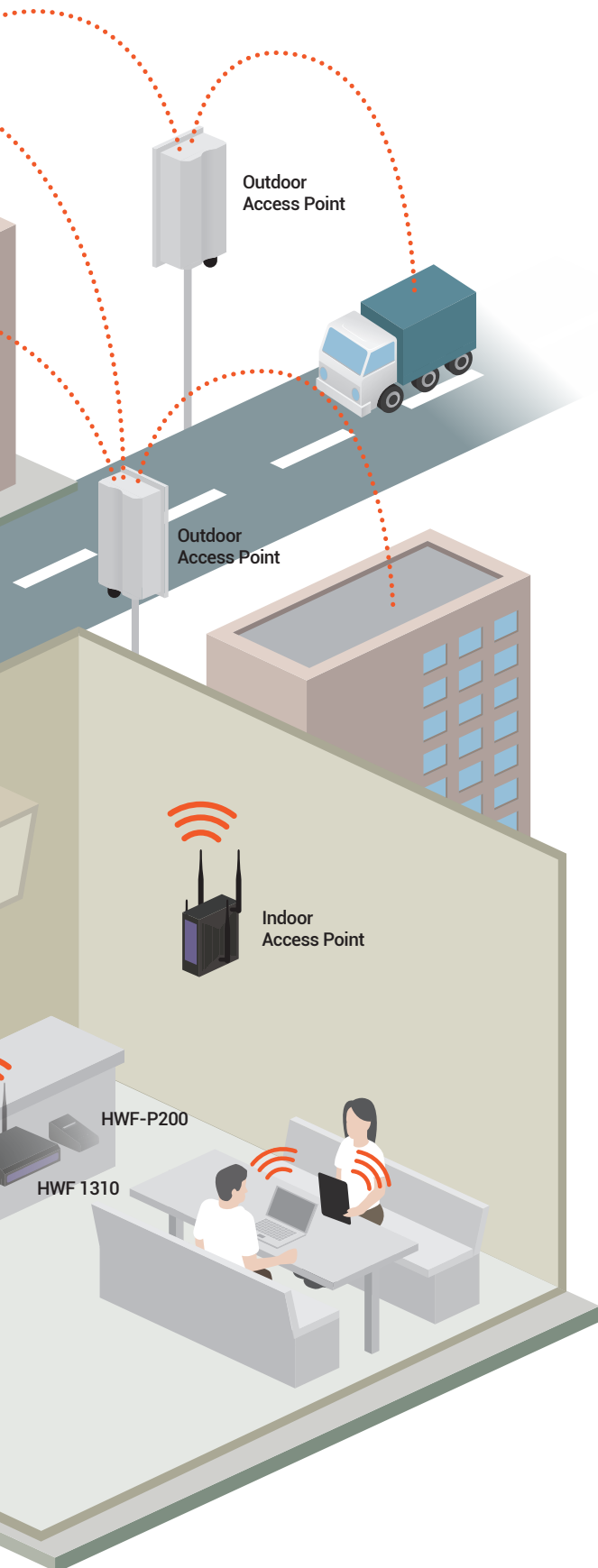
The HWF 1310 further provides a few helpful functions for setup or maintenance. A special function called 'press-n-connect' helps users setup a mesh network within 30 seconds by simply pressing a WES (Wireless Easy Setup) button. This enables Wi-Fi coverage to where Ethernet cabling can't be reached. Moreover, log function tracks system activities, and generates account detailed reports with flexible options.

- Ready-to-go hotspot turnkey for hospitality application
- Multiple fare and guest policy selections through hot-key
- 30 seconds to setup mesh network
- On-line login via social media website check-in
- On-demand account roaming

HWF Solution Pack

- HWF 1310 access management AP
- HWF S200 policy generator
- HWF P200 2" thermal printer





4 IWF 5210

Compact Outdoor AP / Roaming CPE with Single RF, Dual band

IWF 5210 is a compact IP68 grade, PoE-integrated outdoor AP offering flexible 4-in-1 mode (AP/ CPE/ WDS/ Repeater). It is a cost effective deployment and ideal for roaming, outdoor backhaul, and mobile connectivity.

The IWF 5210 is a 2x2 MIMO, single RF, 802.11a/b/g/n outdoor Wi-Fi AP housed in IP68 grade die-casting chassis for all-weather proofing. Moreover, it supports wide temperature operation from -20°C to +70°C. The unique membrane venting window balances the air pressure but repels environment contaminants, such as dust, carbon and sand. All these physical and RF features make IWF 5210 an ideal Wi-Fi solution for outdoor applications, such as security surveillance, transportation, and oil/gas refinery.



IWF 5210 can support four operating modes: AP, CPE, WDS, and Repeater mode. It's easy to change the setting via web-GUI. When IWF 5210 is operated as an AP station, the high-power signal and long-range coverage act as Wi-Fi clients. When operating in CPE (Client) mode, the IWF 5210 functions as client card for roaming or act as a Wi-Fi modem to receive wireless signal over the last-mile internet link from WISP. In WDS mode, mesh networking is activated for roaming application. IWF 5210 can switch to Repeater Mode and helps extend wireless connectivity coverage.

- Multiple operating mode in AP/ CPE/ WDS/ Repeater
- Single RF, dual 2.4/5GHz band for 802.11 a/b/g/n for transmission up to 300Mbps
- Weatherproof IP68 grade metal-inside housing with -20 to +70°C wide operating temperature
- Gigabit Ethernet with uplink port powered by standard IEEE 802.3af PoE
- Tunnel-based AP management by backend AP controller

5 MAC 3500P2-AX0

Compact Motion Controller with Point-to-point 4-axis P-mode Motion Control Module



MAC 3500P2-AX0 is a PC-based motion controller enabling 4-axis point-to-point application. With pulse type commands, MAC 3500P2-AX0 supports pulse output rate up to 9.8MHz and encoder input up to 8 MHz in 4xAB phase mode. Dedicated I/Os for servo control and mechanism are also available to facilitate whole machines buildup. Besides the motion control interface, MAC 3500P2-AX0 provides 4 COM ports to control legacy serial devices and equips with Intel® P4500, up to Intel® Core™ i7-620M, processor ensures sufficient computing power. All features make MAC 3500P2-AX0 suitable for semiconductor equipment, test instruments and other machine automation application.

- Fanless design supports Intel® Core™ i7/ i5 socket processor
- 4-axis independent control and pulse output up to 9.8Mpps
- Support T-/S-curve velocity profiles
- Support synchronization and multi-axis linear interpolation
- Support speed and position override
- One available expansion PCI slot for expansion

6 NET 3140P2-P12D

EtherCAT Motion Controller for Contouring Application and High Volume Axes



NET 3140P2-P12D, which controls up to 32 axes in a single compact platform, is an EtherCAT motion controller with multi-axes contouring capabilities. NET 3140P2-P12D is a distributed solution, where motors and I/O modules locate outside the controller and are connected in one network via off-the-shelf Cat5 cables. NET 3140P2-P12D owns various motion control functionalities, such as point-to-point position control, E-Gear and contouring with dynamic optimization. To complete an EtherCAT solution, NEXCOM also provides a few EtherCAT I/O modules to work with NET 3140P2-P12D. Moreover, standard 3rd Party EtherCAT

I/O can also be introduced if required. NET 3140P2-P12D complies with the international standard IEC 61131-3 and supports 5 commonly used programming languages for industrial control. Users can handle programming easily with any of the 5 languages, make a prompt development and facilitate the maintenance in the future.

- Distributed motion and I/O control via EtherCAT technology
- Up to 32 axes in a single controller with standard Cat5 cable
- Supporting 3D circular interpolation
- Standard and 3rd party EtherCAT I/O modules supported
- 5 international standard languages facilitate motion control development

7 NISE 300

Fanless Computer Advocates M2M Factory with 6 mini-PCIe Expansion Capabilities



NISE 300 is based on the 4th generation Intel® Core™ processor family paired with Intel® 8 Series Chipset. With CPU performance up by 13% and graphical performance by 32%, the fanless box has outstanding system performance for intelligent and industrial computing solutions.

NISE 300 features 8GB DDR3/DDR3L memory, CFast, SATA 3.0, USB 3.0 interfaces. It supports wide range power input 9~30VDC and can operate from -5°C to 55°C under fanless condition. With all I/O aligned on the front side and its compact size, usability is significantly improved for better user experience. Two unit of NISE 300 can fit in a 2U 19" rackmount chassis.

NISE 300 provides rich and swappable I/O interfaces. NISE 300 supports Fieldbus protocols (PROFIBUS, DeviceNet, EtherCAT, PROFINET, CANOpen, MODBUS), network connectivity (GbE LAN, Wi-Fi, GSM), storage (mSATA) and other I/O interfaces (GPIO, RS232/422/485). Along with flexible multiple modular expansions, the versatile NISE 300 can be used for M2M intelligence and factory automation platforms.

- 4th gen. Intel® Core™ processor family paired with Intel® 8 Series Chipset
- Multiple and flexible mini-PCIe module expansion
- Swappable I/O interfaces
- Support factory automation (PROFIBUS, DeviceNet, EtherCAT, PROFINET, CANOpen, MODBUS)
- Support M2M application (Wi-Fi, GSM, GbE LAN)

8 VTC 1010

Dual WWAN and SIM In-vehicle Computer Delivers an Always-Connected Fleet

VTC 1010 is packed rugged, fanless, and 1 DIN compact enclosure. It is specifically designed to comply with stringent MIL-STD- 810G military standard for the harsh in-vehicle application. Based on Intel® Atom™ processor E3800 product family (formerly codenamed "Bay Trail"), VTC 1010 features wide operating temperature range, dual WWAN and SIM, built-in GPS with optional dead-reckoning, intelligent vehicle power management and four mini-PCIe expansions. VTC 1010 can deliver the telematics technology for real-time voice and data communication, vehicle tracking and navigation, mobile video surveillance as well as in-vehicle infotainment.

VTC 1010 features rich PAN, WLAN and WWAN wireless connectivity. With dual SIM card design, VTC 1010 allows choice of the best service carrier network and minimizes roaming cost. VTC 1010 can be configured to work with two independent WWAN connections and can effectively increase the bandwidth for faster massive data transfer over the air. In addition to data connectivity over the air, VTC 1010 also supports two-way voice communication. VTC 1010 comes with built-in CAN bus 2.0B interface and optional OBDII (J1939/J1908) port to monitor the vehicle operating status real-time and trouble-shoot a non-working vehicle.

Equipped with intelligent vehicle power management, VTC 1010 can be waked up on by ignition, timer, or remote dial-up for flexible operation or maintenance. By integrating the varieties of I/O and multiple expansion sockets, VTC 1010 can flexibly adapt to the demand for versatile telematics applications, such as infotainment, fleet management, dispatching system and mobile video surveillance.

- Dual SIM card + dual WWAN module support
- Built-in GPS, optional dead reckoning support
- Intelligent vehicle power management: wake-up on ignition, RTC timer and remote dial up
- Four mini-PCIe expansion slots
- Two-way voice communication support
- Compliant with MIL-STD-810G



9 VMD 3002

Robust Vehicle Mount Display Increases Situation Awareness

VMD 3002 is a robust 10.4-inch TFT LCD monitor with enhanced brightness, projected capacitive touchscreen, and high performance loud speaker. VMD 3002 is designed with a single cable to consolidate power, display, and other control signal to ease the installation and secure the connection. Thanks to its standard VGA interface, VMD 3002 can work as a display device for most of vehicle computers in the market. VMD 3002 also features dual analog video inputs to feed the real time video from the rear view cameras to the display. This is a handful feature to prevent blind spots when driving a large vehicle and therefore improve the driving experience.

VMD 3002 has very robust mechanical design and is compliant to IP65. This important nature makes it hassle free to operate under outdoor or other extreme environment operation. VMD 3002 can take with wide range power input and can operate under extended operating temperature. With the 1000nits ultra high brightness display and adaptive brightness control, it is an ideal solution for in-vehicle and outdoor applications

- 10.4" XGA TFT LCD with 1000cd/m² brightness
- P-Cap touch screen with multi-touch capability
- Wide range DC input from 9~36V
- Support standard VGA display input
- Support two CVBS video inputs for side/rear view camera
- Compliant with IP65

10 nROK 5500/5300

Train Computer for Improved Passenger Infotainment & Safety

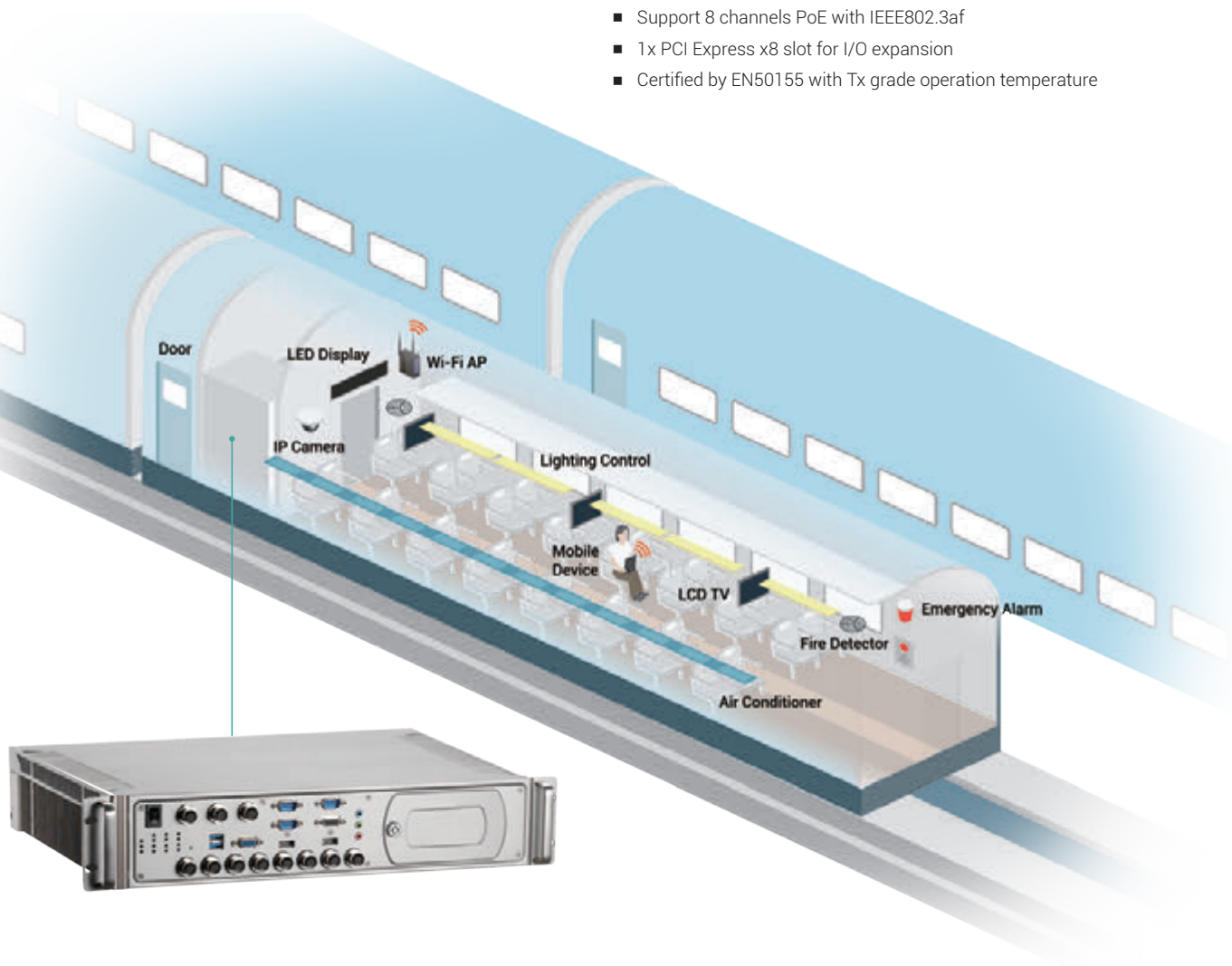
nROK 5500/5300 is designed to address the need of solid and powerful computer platform to improve passenger service experience for information, entertainment, and safety in the rolling stock market. nROK 5500/5300 is packed in a fanless 2U standard rack-mount enclosure and features with secure lock mechanism for power, data network, and control signal connection. It can take 24VDC or 110VDC power feed and can work flawlessly under EN50155 Tx operating temperature criteria.

nROK 5500/5300 comes with large data storage, powerful processor, and multi-path network connections and is fully compliant to the criteria of installation and operation in rolling stock vehicles, e.g. rapid transit system, metropolitan rail, commuter rail, high speed rail, tram, and train. It features powerful 3rd generation Intel® Core™ i7/ i5 processor,

4x removable storages with secure lock, 8x Power-over-Ethernet LAN ports, and multiple choices of Wireless LAN, cellular network options.

The power, data, and control signal connections are designed with secure lock to withstand the vibration and impact introduced in the rolling stock operating environment. It is an ideal hardware platform to work as a central server for passenger information, network access service, on-board entertainment, and surveillance applications in rolling stock market.

- Intel® Core™ i7 3517UE / i5 3610ME
- Support ignition input with power On/Off delay time setting
- Four removable 2.5" SSD trays
- Secured and isolated RS-232/422/485, GPIO and 24/110 VDC power input
- Support 8 channels PoE with IEEE802.3af
- 1x PCI Express x8 slot for I/O expansion
- Certified by EN50155 with Tx grade operation temperature



11 NDiS M323

OPS Digital Signage Player Based on Future Intel® Celeron® Processor



NDiS M323 is based on the Intel® Celeron® processor J1900 and follows the electrical and mechanical specifications of the Open Pluggable Specification. NDiS M323 can be plugged into any OPS-compliant display devices to render rich multimedia contents. Thanks to the modular design, NDiS M323 satisfies the need for quick deployment and hassle-free maintenance of large digital signage network dispersed in different geographical locations. NDiS M323 is powered by the Intel® Celeron® processor J1900. The digital signage player has an integrated Intel® Gen 7 graphic engine and supports Microsoft DirectX® 11. Taking advantage of the latest Intel technology, NDiS M323 can accelerate, 3D rendering, image processing and video decoding to provide highly personalized information base on the result of audience measurement to deliver accurate marketing message to target audience.

- Intel® Celeron® processor J1900 on board
- Integrated Intel® Gen 7 graphic engine with support DirectX® 11 support
- Dual DDR3 SO-DIMM support up to 8GB
- WWAN/ WLAN/ TV tuner support
- Out-of-Band remote management and control support

12 NDiS B533

High Performance Digital Signage Player for Engaging, Interactive User Experiences



NDiS B533 is based on the 4th generation Intel® Core™ processor family and Intel® Q87 chipset. This fanless digital signage player supports up to 16GB of DDR3 memory, VESA/wall mounting, three independent displays with HDMI interface and network connections including LAN, Wi-Fi and 3.5G. USB 3.0 interfaces and mini-PCIe slot

are also provided for custom function and peripheral expansion.

The NDiS B533 is designed to redefine customer experience in a smart stunning and secure way. NDiS B533, based on the 4th generation Intel® Core™ processor family, offers improved computing and graphic performance as well as enhanced security in a reliable design. NDiS B533 can address the needs of customer and context-aware interaction, delivering engaging experience and compelling.

- 4th generation Intel® Core™ processor family
- Intel® HD Graphic 4600
- 3x HDMI independent displays
- USB 3.0, dual GbE LAN support
- WWAN/ WLAN/ TV Tuner support

13 NDiS M533

OPS-compliant Player Simplifies Installation & Maintenance of Digital Signage Network



NDiS M533 is based on the 4th generation Intel® Core™ processor family and follows the electrical and mechanical specifications of the Open Pluggable Specification (OPS). NDiS M533 can be plugged into any OPS-compliant display devices to render rich multimedia contents. Thanks to the modular design and advanced built-in remote management function, NDiS M533 satisfies the need for quick deployment and hassle-free maintenance of large digital signage network dispersed in different geographical locations.

NDiS M533 is powered by the 4th generation Intel® Core™ processor family paired with mobile Intel® QM87 Express Chipset. The digital signage player has an integrated Intel® HD Graphics 4600 and supports Microsoft® DirectX 11.1. Taking advantage of the latest Intel technology, NDiS M533 can accelerate 3D rendering, image processing and video decoding to provide highly personalized information based on the result of audience measurement to deliver accurate marketing message to target audience.

- 4th generation Intel® Core™ processor family
- Intel® HD Graphics 4600 with DirectX® X 11.1 support
- Dual DDR3L SO-DIMM support up to 16GB
- WWAN/ WLAN/ TV tuner support
- Support for Intel® AMT 9.0 and CEC function

14 NSA 5150

Scalable Network Security Platform for Full Range of Applications

NSA 5150 can be scaled to fit into full range of applications. In pursuit of various different vertical market segments, network security vendors require scalable platforms which are suitable for both entry-level and high-end applications. In response to these demands, NEXCOM has unveiled the NSA 5150; a unique network security platform which features expandable port density and functionality, to fulfill a multitude of application requirements. NSA 5150 can be configured with eight to sixteen GbE ports, 10GbE fiber ports with LAN module, and one PCIe card to give network performance an extra boost. Computing performance can also be modified with a wide range of processors including Intel® recently launched Xeon® E3 family, 4th generation Intel® Core™, Pentium®, and Celeron® processors.

NSA 5150's scalability can help vendors optimize the combination of port density and computing performance based on application requirement and service capacity. It can be used in port hungry virtual private network, adapted for CPU-demanding Antispyware, or turned into a VoIP gateway with telephony card. It can be a cost-effective model for lower-end market segments and also be transformed into a premium platform chasing high-end market opportunities.

NSA 5150 also features extra flexibility. In addition to 8+8 GbE ports, the network security platform has DDR3 memory up to 16GB, one CF expansion slot, one 3.5" SATA HDD, and one PCI expansion slot. NSA 5150 can also be tailored for SSL, xDSL card, or Wireless card.

- Intel® Xeon® E3 family, 4th gen. Intel® Core™ family, Pentium®, and Celeron® processors
- Intel® C226 chipset
- 8 GbE LAN ports with one LAN module (optional 8x GbE LAN ports)
- 4 latch bypass
- 4 DDR3 1066/1333 memory, up to 32GB
- Support one PCIe slots
- One 3.5" HDD bay/ two 2.5" HDD bay (optional)

15 NSA 5640

World First Network Appliance Based on Freescale QorIQ

NSA 5640 is designed for advanced Unified Threat Management (UTM) solutions with multi-Gigabit throughput. Featuring the Freescale multicore QorIQ T4240 SoC and high-speed networking and interconnect interfaces, the NSA 5640 addresses the escalating cyber threats fueled by rising network communication, bandwidth-hungry activities and number and complexity of Internet-based attacks. The NSA 5640 is a dedicated network security appliance based on Freescale's QorIQ T4240 24 virtual-core communications processor integrated with Data Path Acceleration Architecture (DPAA) packet handling infrastructure. Combining up to 6GB of DDR3 memory, NSA 5640 bolsters network security and network responsiveness in the face of high volume network traffic.

The NSA 5640 is packed with GbE and advance PCIe 3.0 interfaces and supports high bandwidth 10 GbE connections through modular expansion. Moreover, NEXCOM provides NSA 5640 with full SoC services, including board support package (BSP), customized operating systems and technical support for application software integration, building an optimized appliance based on different project needs.

- Freescale QorIQ T4240 communications processor, 1.8GHz
- Up to 6GB DDR3 memory
- 1 x mini-PCIe expansion
- 8 GbE LAN ports, optional 4-port SFP+/ 10GBase-T module
- Onboard 2GB NAND flash, 128MB NOR flash
- Removable SD card at front

NSA 5640



16 DNA 120

Desktop Security Hardware Secures VPN with Intel® Advanced Encryption Standard

NEXCOM desktop security hardware DNA 120 supports Intel® Advanced Encryption Standard (Intel® AES) to provide secured network communication for small and home office networks. The palm-size DNA 120 based on Intel® Atom™ processor E3815 (formerly codenamed "Bay Trail") , running at 1.46GHz. Based on the 22nm Intel® Silvermont microarchitecture, integrates Intel® Advanced Encryption Standard, four LAN ports and Wi-Fi expansions. This fanless desktop security hardware can provide reliable network connectivity to transmit encrypted data over secure communication channels and block unauthorized network access, protecting both wired and mobile internet devices in the workplace from network security threats.

The DNA 120 with four GbE LAN ports can not only connect to internet device but also permit redundant outbound path setup. Meanwhile, the Wi-Fi connectivity is also supported through mini-PCIe expansion, allowing the DNA 120 to put mobile devices including laptops, smartphones and tablets a behind security shield.

The DNA 120, based on 8-Watt SoC Intel® Atom™ processor E3815, is a palm-size fanless desktop security hardware, which offers energy efficiency, requires little maintenance, makes little noise, takes up little space, combining valuable qualities that suit requirements of SOHO networks.

- Intel® Atom™ processor E3815
- Support up to 8GB of DDR3 1333 memory
- Four GbE LAN ports
- One mini-PCIe slot for Wi-Fi module
- Fanless design



DNA 120

17 DNA 1150

Help SMB Build a Securely Connected Workplace Based on Intel® Atom™ Processor C2358

NEXCOM has released a desktop network appliance DNA 1150 to help small and medium enterprises build a securely connected workplace. Based on the dual core SoC Intel® Atom™ processor C2358, the DNA 1150 packs excellent performance per watt, accelerated data cryptography and compression, and server-grade LAN functions into a small form factor. This desktop network appliance can create safe environments for network communication to connect employees and offices. The Intel® Atom™ processor C2000 family is a multi-core SoC. Based on the 22nm technology, the processors feature up to eight cores, Intel® QuickAssist Technology, and high level of I/O integration. With Intel® QuickAssist Technology, which is an integrated hardware acceleration engine, the Intel® Atom™ processor C2000 family can consolidate network communication workloads and increase data throughput, enabling hardware developers to stand to benefit of optimized allocation of computing resources, decreased development effort, and reduced BOM costs.

Although a desktop network appliance, the DNA 1150 has up to 32GB of DDR3 1600/1333 memory and six LAN ports with support for I/O virtualization technologies. The DNA 1150 can increase overall network throughput to manage high network traffic. In addition, the DNA 1150 provides one PCIe x8 slot for function expansion. Based on the dual core SoC Intel® Atom™ processor C2358, the DNA 1150 is power-efficient and compact in size and offers higher value for money compared to multi-chip platforms.

- Intel® Atom™ processor C2358 2 Core 1.7GHz with Quick Assist , BGA type
- DDR3-1333 Long-DIMM ECC memory, Max. 32GB
- Support 6 PCIeGbE LAN ports
- Support one mini-PCIe x1 slot
- Internal one 2.5" HDD Bay
- Two pairs dual latch bypass



DNA 1150

18 NCB-221

The Ultra-low Light 2MP IP Box Camera for City Surveillance

NCb-221 is the first NexCam which particularly designed for the low light surveillance environment. It uses Sony Exmor image sensor and focus on the users who require the excellent performance under the low-light condition. The advantages of NCB-221 are the extremely high sensitivity, excellent image quality, beautiful color performance with low noises; hence, NCB-221 is the camera perfectly for city surveillance project.

- Sony Exmor 1/2" image sensor
- 0.005lux in B/W; 0.05lux in color mode
- Full HD 2MP@30fps
- DWDR
- 2-way audio
- DI x 1, D O x 1
- -10°C~60°C / 14°F~140°F
- DC 12V / AC 24V / PoE
- DC Iris Lens supported
- Micro SD supported

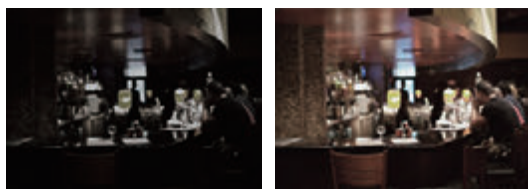
19 NVIS 5640

4 Bay, Tower NVR hardware platform with 4th Generation Intel® Intel® Core™ Processor

NViS 5640, the tower type NVR hardware platform is equipped with an 4th generation Intel® Core™ processor to meet high performance security surveillance needs of Retail or SMB users. NViS 5640 provides a wide variety of display and comprehensive I/O interfaces which including Gigabit Ethernet, HDMI, USB 3.0 and high data storage capacity up to 16TB. In addition, to enhance the remote management ability, NViS 5640 supports Intel® Active Management Technology 9.0 (AMT 9.0) and RAID 0/1/5 to improve data access and protection, moreover, one PCIeX16 slot could be installed a video capture card for hybrid DVR platform.

- Support 4th generation desktop Intel® Core™ processor family
- 4 x 3.5" HDD Bay for up to 16TB data storage
- Dual display VGA and HDMI
- 2 x Gigabit Ethernet
- 4 x USB 3.0

Low Light Surveillance Environment



Conventional

Low Light



NCb 221



NViS 5640

Japan Partner Conference Deputed in Tokyo Enhancing Win-Win Partnership



On June 20, 2013, NEXCOM Japan held its first Japan Partner Conference at the Strings Tokyo An InterContinental City Hotel to enhance win-win partnership. Over 60 key distributors and corporates joint to learn the latest trends, business strategies and a full line of products from NEXCOM. The conference successfully enhanced partners' understanding and faith towards NEXCOM.

At this conference, NEXCOM founder Clement Lin and Product Managers flined to do in depth communications with valued customers. Clement Lin opened his speech in deliberating Intelligent System trend and how it affects versatile industries. He pointed out NEXCOM's strengths and advantages in its product design and development, which are more computing power, less power budget, more wireless protocols and data security, under the IS

trend. Tomoyuki Asaumi, NEXCOM Japan Sales Director further deliberated the localized business strategies and unique service supports. Other topics, such as products roadmaps and real projects sharing, were delivered at the conference as well. These product roadmaps included NISE fanelss computer, industrial-grade Applied Panel PC, VTC in-vehicle computers, and digital security NVR and IP cameras.

Among various showcase products, NISE 4000 series was under spotlight. The high density I/O interfaces, front access design, and microminiaturized form factor made NISE 4000 stand out from the crowd. The NISE 4000 serise adopted modular design concept, which could help users expand I/O or expansion capacity upon their unique requests. Able to offer up to four sets of

expansion slots but in a much compact size (when compared with 4U rackmount form factor) amazed partners the most.

At the welcome dinner Mr. Masahiko Honda, Senior Manager of Product Development at NEC Converged Network Division also delivered a toss speech. Honda said, "We have had trusted relationship with NEXCOM for a long time. Whenever I visited NEXCOM, I always got my job done effectively and efficiently." His testimony impressed all guests, and enhanced the faith and truth towards NEXCOM. Furthermore, NEXCOM Japan also awarded and honored three partners, who had accomplished great achievement, on June 20. They were FUKUNISHI ELECTRICAL CO., LTD who won Best Partner Award, Rss Corporate for Best Contribution Award, and Ryoyo Electro Corporate for Fast Growth Award.

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