





#### What's New

2015 Global Partner Conference

#### In Depth

NEXCOM Goes Full Throttle on Six IoT Applications

#### **Technology Focus**

Ride the IoT Wave Quickly and Securely



#### Dear Partners,

Heating up with the most popular terminologies—Mobile, IoT, and Cloud—we have seen a prosperous 2014 in the Brave New ICT World! The brand new trends are restructuring and reshaping the planet with new product ideas and new business models. This significantly enlarged the ICT market in 2014, and so did the growth of NEXCOM! In 2014, NEXCOM reached \$177M of revenue with a 27% growth rate over 2013.

To build the so-called Smart Planet, we need to deploy IoT in almost every corner around the globe. A totally new generation of devices with more wireless protocols and computing power are not only replacing millions of old devices, but also being installed up to a number of billions, reaching every corner of the world!

All of a sudden, we found out that IoT has become the DNA blueprint for all the IPC players and suppliers of industry-based vertical solutions. In every vertical application domain, we are already the supplier of sensors, gateways, network appliances, and even servers and storages in data centers. As the industry moves to more mobile and wireless focused applications along with more sophisticated SoC designs, all the "Things" will become smart and connected, and all the IPC players will become IoT players almost overnight!

Most vertical solutions from the bottom of IoT and all the way up to the cloud incorporate protocols and operating systems based on none other than Ethernet and Windows. Various SoC implementations and wireless protocols make programming a nightmare for system integrators. As a result, to quickly close the deal with end users, system integrators need to acquire hardware with software bundles, or the vertical solution itself, or go straight forward and provide customers

with ready-to-go total solutions! Since competition is heating up in all segments because of the fast-moving internet world, most enterprises can only focus on their own core competencies, while outsourcing IT operations in order to deliver the best service! That's why the so-called XaaS (Everything as a Service) is getting more and more popular in the past 3 years!

That's also why NEXCOM is now providing specialized appliances and industry-specific solutions in addition to the hardware platforms. We have seen clearly the trend moving from Product Selling to Service Providing. System integrators in the field need mature and proven solutions to fulfill customer requirements at the soonest! Today, we have solutions in Factory/Machine Automation, in Vehicle, in Retail, in Surveillance, in Industrial Wireless/Firewall, and even in Medical Informatics, from IoT to Cloud.

We are seeing phenomenal growth in the ICT market. As I mentioned, it's going to restructure and reshape the planet with new product ideas and new business models. It has already created many ICT industry stars in the past 10 years; it will create even more super stars day by day in the coming 10 years. We together could grow significantly year by year if we keep up with the megatrend. Let's do the right things right!

Clement Lin

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#### About NEXCOM

Founded in 1992, NEXCOM integrates its capabilities and operates six global businesses, which are Multi-Media Solutions, Mobile Computing Solutions, IoT Automation Solutions, Network and Communication Solutions, Intelligent Digital Security, and Medical and Healthcare Informatics. NEXCOM serves its customers worldwide through its subsidiaries in five major industrial countries. Under the IoT megatrend, NEXCOM expands its offerings with solutions in emerging applications including IoT, robot, connected cars, Industry 4.0, and industrial security. www.nexcom.com





# **NEXCOM Goes Full Throttle on Six IoT Applications**

he Internet of Things (IoT) is creating unprecedented opportunities in the area of critical infrastructure. Seeing and seizing these, NEXCOM is going full throttle on six revenuegenerating applications including IoT, robotics, Industry 4.0, connected car, responsive stores, and security in industry IoT.

In IoT applications, NEXCOM focuses on vertical clouds by developing IoT gateways and complete PaaS (platform as a service) offerings. NEXCOM's C2C (click to connect and connect to cloud) platform simplifies data mining task from vertical clouds with intuitive GUI. C2C PaaS, on the other hand, enables easy integration with third-party SaaS (software as a service) and sends data analysis via computers or mobile devices anytime, anywhere.

For robotics development, NEXCOM establishes R&D integration center and independently develops EtherCAT controllers. By engaging in downstream servo motor and I/O connection as well as upstream integration with third-party software like CODESYS and self-developed NexECM 2.0 and Xcare 4.0 software, NEXCOM accelerates software/hardware integration and offers remote monitoring capability. With these all-inclusive streamlining capabilities, NEXCOM not just propels mechatronics applications forward but also speeds up customers' time to market.

To bring IP networking and manufacturing intelligence to the factory floor, NEXCOM's smart factory solutions of Industry 4.0 combine distributed control system, SCADA, AMI, safety system, and predictive control and maintenance system. Via IoT gateways, each subsystem sends in-factory data to cloud, enabling up-to-date decision-making information for the executives.

The IoT is not limited to industrial applications. It also helps to shape the future of retailers. NEXCOM provides digital-physical responsive store solutions that bring shoppers a more interactive and personalized in-store shopping experience. To help physical retailers recreate business value, NEXCOM's responsive store solutions cover digital signage, digital shelf The IoT is also advancing to connected cars, which makes traffic management smarter and accelerates sustainability. NEXCOM's connected car solutions integrate critical in-vehicle data, data communications, and versatile sensors to turn connected cars into information hubs. Connected cars can perform various tasks. For instance, each car can monitor nearby vehicles to avoid road accidents, communicate with transportation infrastructure to optimize routes, amass sensor-generated data to acquire vehicle status, and provide in-vehicle infotainment to drivers and passengers. All of these make driving safer, smoother and more enjoyable.

Last but not least, privacy and data security remain critical for all IoT applications. To ease big data and related security concerns, NEXCOM's networking solutions include bandwidth management, industry firewall, industry storage, and industry switch. Thanks to these, users can enjoy unlimited data access with enhanced protection and peace of mind.

We urge you to sign up for our Global Partner Conference, which will be hosted in Taipei, Taiwan, on June 1, 2015. Join us to explore the latest trends, new markets, and opportunities





## **Worldwide Trade Shows at a Glance**

## April to July 2015

Month	Exhibitions	Info
4 April	Hannover Messe	April 13-17, 2015 Convention Center, Hannover, Germany Booth No. Hall 9/ D15
	International Security Conference West (ISC West)	April 15-17, 2015 Sands Expo, Las Vegas, NV, USA <b>Booth No. 2037</b>
	RSA Conference	April 21-23, 2015 Moscone Center, San Francisco, CA, USA Booth No. S2244
	Interop	April 28-30, 2015 Mandalay Bay Convention Center, Las Vegas, NV, USA <b>Booth No. 1963</b>
6 June	IFSEC International	June 16-18, 2015 ExCeL London, United Kingdom Booth No. Hall S14/ B1375
	WasteExpo	June 2-4, 2015 Las Vegas Convention Center, Las Vegas, USA <b>Booth No. 3734</b>
<b>7</b> July	TAIROS	July 16-19, 2015 Nangang Exhibition Center, Taipei, Taiwan



we demonstrate how the IVT 1100 enables the transformation of a connected car and brings out the value of big data analytics; and we elaborate on how the IVT 1100 enables new in-vehicle features and services.

We additionally consider how Intel® Advanced Encryption Standard New Instructions (Intel® AES-NI) and other technologies secure in-vehicle environments. The article also covers Intel® IoT Gateway and how it accelerates time to market for the NEXCOM IVT 1100.

### **Drive towards Intelligence**

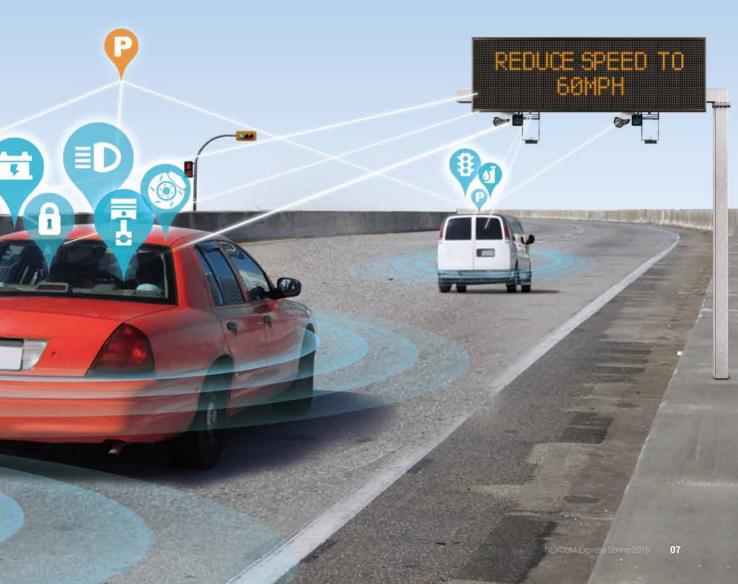
With more than half of the global population

living in cities, roads and highways are more and more clogged with traffic. To optimize traffic flows, ITS solutions are being developed or tested to help implement dynamic traffic management with measures such as dynamic tolling, variable speed limits, traffic condition alerts, and highway platooning.

To get to destinations efficiently, head units need access to real-time traffic information so they can provide drivers with alternative routes to reduce travel time, toll fees, and fuel costs. However, some head units on the market lack either intelligence or connectivity; others are not reliable.

The NEXCOM IVT 1100 in-vehicle computer meets these needs by providing computing and communication backbones for data processing and data exchange while enabling information visualization with its 7-inch touch display (Figure 2). Based on the Intel Atom processor E3825, the IVT 1100 is equipped with dual-core computing power, Gen 7 Intel® HD graphics, and outstanding integration of I/O interfaces with support for graphics, image, and digital signal processing. The IVT 1100 also supports connections to in-vehicle sensors, cameras, cellular networks, and internet.

These supports are important as they enable the IVT 1100 to provide functions



that matter to vehicle operations. For instance, the IVT 1100 can offer different route options based on current traffic conditions, allowing drivers to choose based on their preferences. On the road the IVT 1100 keeps a close contact with infrastructures, alerts drivers to changing lane restrictions and traffic lights, and can suggest detours to avoid possible delays.

The IVT 1100 interacts with in-vehicle sensors and other vehicles as well. On the highway, the IVT 1100 enables a vehicle to form a convoy with other vehicles by keeping a certain distance from them and moving at a similar speed to remove the burden of driving from drivers. When approaching the destination, the IVT 1100 can seek and reserve a sensor-enabled parking space and assist with parking.

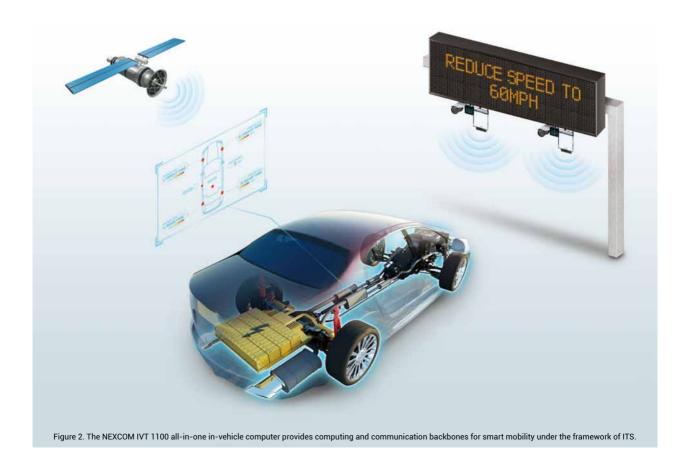
In addition, the IVT 1100 can help save lives in case of an accident. By making automated calls to emergency services and giving the vehicle's GPS location, the IVT 1100 can reduce emergency services' response time and casualties in road accidents. According to the HarmonisedeCall European Pilot (HeERO) consortium, "if all cars were equipped with the eCall system, up to €20 billion could be saved annually."

#### **Connect the Car**

Vehicles are composed of a variety of automotive electronic systems and sensors that can be information gold mines. Head units with appropriate connectivity can extract vehicle data from these automotive electronic systems and share the data with cloud servers where big data analytics can be performed.

To enable data mining for information, the IVT 1100 supports controller area network (CAN) and on-board diagnostics-II (OBD-II) protocols which are widely used in in-vehicle communication standards. Additionally, the IVT 1100 provides Wi-Fi and Bluetooth networks through the Intel® Dual Band Wireless-N 7260 adapter, as well as 3G/4G connectivity.

A connected car provides many of the benefits the Internet of Things (IoT) can offer. From a driver's perspective, head units open up opportunities for remote diagnostics and preventive maintenance, giving drivers more control over their vehicles. This means that drivers can check vehicle status online via mobile devices before driving. If a part shows signs of



aging or other degradation, head units will search for a nearby car shop with the item in stock. Paying mechanics a visit only when necessary reduces not only the chance of roadside breakdown, but also the number of unnecessary trips.

Driving can become even more personal with head units that know their drivers and can automatically apply different settings such as dashboard preferences and adaptive cruising systems.

Head units also make possible usagebased insurance, also known as black box insurance. By recording data events, head units help insurers create driver profiles based on an individual's driving behavior to devise tailored-made insurance packages and set fine-grained pricing policies.

#### **Come Down to One Unit**

Heads units evolve rapidly as new features are added and premium features become standard. The Intel Atom processor E3825 at the heart of the IVT 1100 provides the performance and upgrade path needed for head units. The Intel® Atom™ processor E3800 product family delivers several advancements in visual processing capabilities with its Gen 7 Intel HD graphics, enabling faster media conversions, enhanced HD video transcoding, and highly efficient image processing. Graphics performance is enhanced through dedicated execution units and fixed-function and hardware decode engines.

The powerful processor graphics enable the IVT 1100 to consolidate functions ranging from navigation to vehicle recording as

well as car audio/video that normally run on separated hardware units (Figure 3). Furthermore, the Intel Atom processor E3800 product family includes single-, dual-, and quad-core configurations, enabling a range of performance and allowance for spare system headroom for mobile device integration, cloud-based and location-based services, and future feature expansion.

#### **Ward off Threats**

Vehicles are becoming an expansion of our connected digital lives. With automotive electronic systems, vehicle data, and personal information at stake, it is crucial to quard head units against security threats.

The Intel Atom processor E3800 product



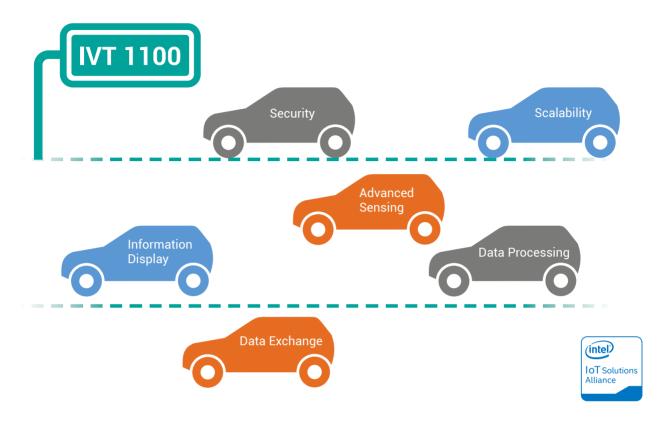


Figure 4. The NEXCOM IVT 1100 provides key capabilities to continually deliver new, exhilarating driving experiences.

family includes hardware-assisted encryption capabilities like Intel AES-NI and malware protection like Secure Boot that are not available with the previous generation processor. Intel AES-NI speeds up the data encryption and decryption used to protect vehicle data and personnel information from loss or tampering. Secure Boot allows only chosen software to run on the IVT 1100, not allowing malware to launch and take control. The processors also support Error Correcting Code (ECC) memory to improve data integrity and to keep head units up and running without requiring a reboot in case of memory errors.

Moreover, the IVT 1100 comes in a double DIN sized enclosure based on the ISO 7736 standard for head units to facilitate

the system installation. It is noteworthy because time to market is an important consideration for vehicle manufactures. The IVT 1100 also supports the Intel IoT Gateway. This solution integrates Intel® processor-based hardware, the Wind River Intelligent Device Platform\* XT, and McAfee Embedded Control\*, delivering a full suite of networking, embedded control, integrated security, and remote manageability technologies. These preintegrated, pre-validated hardware and software building blocks provide core functions that help vehicle manufacturers to speed up innovation and create new offerings.

### **Conclusion**

To continually deliver new, exhilarating

driving experiences, the automotive industry relentlessly pursues innovation. Integrating intelligence, connectivity, and security, the NEXCOM IVT 1100 in-vehicle computer with Intel Atom processor E3825 exemplifies how head units can deliver situational awareness, offer driving assistance, increase driving safety and efficiency, and make driving more personal and enjoyable (Figure 4). As vehicles continue to evolve, head units based on the NEXCOM IVT 1100 will continue to evolve developing new capabilities in everything ranging from advanced sensing, data processing and information visualization to data exchange and entertainment features. An in-vehicle computer like IVT 1100 will help build the founding pillars of not only intelligent transportation systems but also IoT.

# Ride the IoT Wave Quickly and Securely

To catch the wave of Internet of Things (IoT), immediate answers to data acquisition, data processing, data communication and data security are demanded across vertical markets. To allow IoT to fully unfurl into transportation, manufacturing and more industries, NEXCOM has developed In-Vehicle Computer VTC 7230/VTC 7240, Industrial IoT Gateway and Controller NISE 3720 Series and COM Express Compact Module ICES 672 based on the 5th generation Intel® Core™ processors (U-processor line).

The graphics and compute performance delivered by Intel Core processors equips NEXCOM in-vehicle computers with multitasking, signal processing, machine vision and video transcoding capabilities. VTC 7230 and VTC 7240 allows implementation of such as Advanced Drive Assistance System (ADAS), Automatic Number Plate Recognition (ANPR) and video surveillance applications on trucks, bus, police cars and ambulances.

Also, the hardware security design of Intel® OS Guard and pre-alarm function allows VTC 7230 and VTC 7240 to not only guard in-vehicle systems from malware intrusion but also protect vehicles from theft. For fleet management, VTC 7230 and VTC 7240 allow for GPS tracking and navigation, and support remote vehicle monitoring and diagnostics with CAN bus interface with optional OBD II function and wireless connection expansion.



In-Vehicle Computer

#### VTC 7230/7240

NEXCOM VTC 7230 and VTC 7240 are designed to foster the growth of connected vehicles to enhance driving safety and efficiency. Using 5th generation Intel® Core™ processors i3-5010U and i7-5650U respectively, VTC 7230 and VTC 7240 boast numerous telematics and security features required for protecting drivers, passengers and goods-in-transit.

# Industrial IoT Gateway and Controller NISE 3720 Series

Designed for smart manufacturing, NEXCOM NISE 3720 series industrial IoT gateways and controllers enable cross-protocol communication, intensive data analysis and information visualization required for big supervisory control and data acquisition (SCADA) applications, helping manufacturers squeeze greater efficiency from daily operation.

Based on 5th generation Intel Core processors, the NISE 3720 series offers a rich set of features including high performance computing, graphics conversion, video transcoding, Ultra HD 4K display, fieldbus networking and Wi-Fi/3G/LTE connectivity. The NISE 3720 series can consolidate and display real-time data and surveillance videos, providing valuable insights into operational improvements and virtual presence at factory floors to increase factory productivity and safety.

In addition, the NISE 3720 series has a free remote management tool NEXCOM Xcare™ 3.0 to simplify remote monitoring, configuration, backup and restore of the industrial IoTteways and controllers.

#### **T6 COM Express Module**

#### **ICES 672**

NEXCOM type 6 COM Express compact module ICES 672 can unlock the potential of IoT across industries. Featuring 5th generation Intel Core processors, ICES 672 has packed triple independent display support, 2D/3D imaging and video processing capabilities and network connectivity on to a 95x95 mm footprint with a low power envelope. ICES 672 is geared toward compute- and graphics-intensive devices with size, weight and power (SWaP) constraints.

## 5th Gen Intel® Core™ Processors (U-processor line) at a Glance

- 5th gen Intel® Core™ processors come in with a multi-chip package (MCP) design. By using Intel's new 14nm process, the processors have integrated multiple computing cores, platform control hub (PCH), graphics engine and hardware-assist technologies onto a single package
- Intel® HD Graphics 55/6000 and Intel® Quick Sync Video offer Ultra HD 4K support, fast video stream transcoding and studding 3D performance. These enhancements deliver better visual experience and allow for PC-like performance by freeing computing power for other tasks
- Hardware-assisted security features including Intel® OS Guard, Intel® Trusted Execution Technology and Intel® AES-NI protect platforms against malware intrusions and data from tampering.



**Application Scope** 

# **Upcoming New Products Big SCADA**

Enterprise Builder Software

# Communicable Industrial Big Data under Industry 4.0 Framework

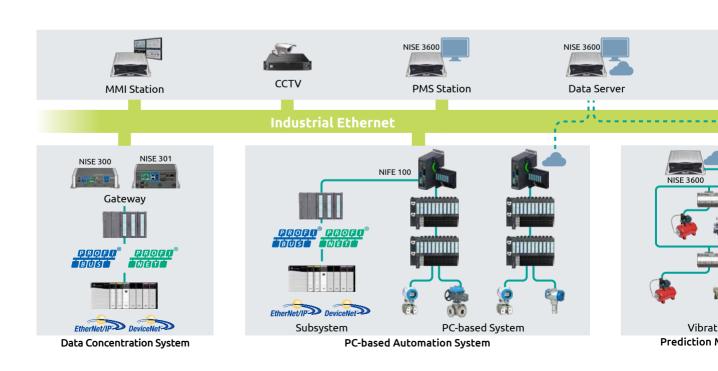
Traditional industrial automation is aimed at making factory work efficiently, but the new concept of industrial automation - Industry 4.0 – covers a broader scope with the aim of enhancing the efficiency for enterprises as a whole. Industry 4.0 systems leverage the Internet technology to allow for communication of machine-to-machine, machine-to-man, factory-to-factory, and factory-to-enterprise, establishing the foundation for Smart Production, Urban Production and Green Production, three goals that Industry 4.0 pursues. Under the Industry 4.0 framework, free data sharing between different segments can help optimize systems; industry 4.0 is Big Data applications in industrial automation segment; and supervisory control and data acquisition (SCADA) can also be called as Big SCADA in this regard. Systems of including factory automation, facility management, pipeline, safety control, and prediction maintenance installed at different sites are all part of Big SCADA.

## **NEXCOM's Big SCADA Solution**

NEXCOM Industrial Automation Solutions 100% meet the criteria for

Big SCADA systems. From the perspective of field control, NEXCOM's Fieldbus Solutions can easily integrate traditional controllers and devices at field sites. NEXCOM's Fieldbus Solutions can establish communication between "Controllers and Controllers" and between "Machine and Machine" in existing systems. The intelligent PC-based controllers not only have highly reliable hardware and control kernel, but also feature open architecture to collect data generated by any 3rd party devices. NEXCOM's PC-based controllers can also provide direct connection to clouds.

Based on the concept of Big Data, Big SCADA has a cloud-based infrastructure. In the information layer, NEXCOM software support includes software drivers and OPC servers. The software drivers allow data to be collected and exchanged among different fieldbus devices. The OPC servers provide the user interface for fieldbus devices (like PLC) and the cloud-based software (like MQTT or Wind River®). Users can easily integrate software solutions with industrial clouds. Of course, we can build cloud gateways with NEXCOM fanless computer platform and software tools, building up the Infrastructure of industrial clouds.



NEXCOM is a leading company in providing Industry 4.0 solutions. In 2014, we have completed technology implementation and product development of Industry 4.0 systems. With both hardware and software capabilities, NEXCOM now provides Big SCADA solutions with one-stop shop services.

## **New Products Highlight** for Big SCADA Application

#### **NISE 3700**

High Performance Fanless Box PC Powered by 4th Gen. Intel® Core™ Processors



NISE 3700

Featuring the 4th Generation Intel® Core™ processor (formerly codenamed Haswell/Haswell Refresh) based on the LGA 1150 socket, NISE 3700 offers significant computing and graphics improvements over the previous generation. With a rich set of I/Os and LGA-based socket design, NISE 3700 offers the flexibility to adapt to various industrial applications.

NISE 3700 supports up to a maximum of 8GB DDR3/DDR3L SO-DIMM memory, and comes with 1 x DVI-I, 1 x DVI-D, 1 x CFast, 3 x Gigabit LAN ports, 3 x COM ports, 4 x USB 2.0 and 4 x USB 3.0 interfaces on the front

**HQ Office** NISE 105 **Cloud Gateway** NIFE 200 PLC ion Monitoring Industry Flow Maintenanec System **AMI System** 

and rear panels. Further expansion options include mSATA, RAID 0 and RAID 1 support, 2 x mini-PCle sockets, GPIO and RS232/422/485 serial connections. For power input, NISE 3700 supports a wide-range power input of 9V to 30V DC and can operate from -5°C to 55°C.

- 4th generation Intel® Core™ processor on the LGA 1150 platform
- 1 x HDMI, 1 x DVI-D, and 1 x DVI-I display output for three independent displays
- 2 x Mini-PCle expansions for mSATA/Wi-Fi/3G support
- 4 x GPI, 4 x GPO, 4 x USB 2.0, 4 x USB 3.0, 1 x onboard CFast socket
- 3 x Intel GbE LAN ports and 2 x COM (2 x RS232/422/485 auto)
- Wide-range DC input of 9V to 30V

## NIFE 200/200P2

PC-based Automation Controller with PCI/PCIe and Fieldbus Expansions for IoT Applications



NIFE 200/202P2

Powered by the quad-core Intel® Atom™ processor J1900, 2.0GHz, NIFE 200/200P2 can provide excellent computing, power efficiency and graphics performance than previous generation Intel® Atom™ product family. NIFE 200/200P2 supports up to 8GB DDR3L memory and has several options for storage devices like CFast, HDD, SSD or mSATA and comes with 2 x COM ports (RS232/422/485) and 4 x USB ports (1 x USB 3.0) and 2 x PCI expansions.

This fanless system supports 2 x mini-PCIe modules for network and automation applications (with optional GbE LAN, Wi-Fi, 3.5G/4G LTE, USB and COM module). NIFE 200/200P is designed with universal support for major fieldbus protocols through add-on modules. This enables NIFE 200/200P2 to offer easy replacement and installation of PROFIBUS, PROFINET, DeviceNet, EtherCAT or EtherNet/IP fieldbus expansion modules for communication in factory automation.

- Onboard quad-core Intel® Celeron® processor J1900, 2.0GHz
- Dual independent display with DisplayPort and HDMI outputs
- 2 x Intel® I210AT GbE LAN ports with WoL, Teaming and PXE support
- 3 x USB 2.0, 1 x USB 3.0, 2 x RS232/422/485 and front-access SD card socket, 1x internal USB socket
- 2 x Mini-PCle sockets for optional Wi-Fi/3.5G/4G LTE/fieldbus modules
- Support -5°C to 55°C operating temperature range and 24V DC input

## **NEXCOM Wi-Fi Mesh Solution**

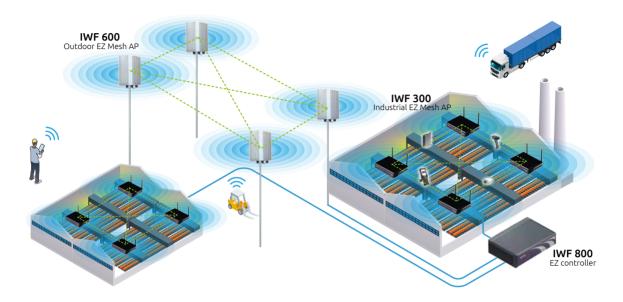


Figure 1: EZ Mesh Wi-Fi Networks in Factories

As embedded devices inside equipment, machine and electrical appliances become intelligent, many of the objects that surround us will be on the network in one form or another. No matter which form it is in, device-to-cloud connectivity generates valuable big data insights that can create and uncover new opportunities for future businesses. Cloud computing can provide a virtual infrastructure for monitoring devices, data analytics, visualization platforms and cloud service delivery. Such business model which cloud computing offers will enable end-to-end service provisioning for businesses and users to access applications on demand from anywhere.

A robust wireless infrastructure is the keystone to fulfilling the IoT structure. Among the many wireless technologies, Wi-Fi mesh is one of the most trusted technologies for building a reliable wireless network infrastructure in the IoT world. NEXCOM's Wi-Fi mesh solution is one of the most advanced mesh technologies to achieve reliable transmissions.

To support tailor-made "Trusted Wi-Fi" solutions to cover different requirements in various vertical markets, NEXCOM offers two families of Wi-Fi mesh solutions:

## **Mobile Mesh Family**

The IWF Mesh family of industrial Wi-Fi provides the benefits of

flexible wireless deployment and reliable performance with secure self-forming, self-healing wireless mesh backbone and fast-roaming features. With select models supporting multiple RF radio modules, simultaneous mesh backbone and standard Wi-Fi coverage can be easily enabled in one setup. Fast-roaming technology allows vehicles on the move to maintain communication even at speeds up to 200km/h, making the industrial Wi-Fi ideal for highway, train and metropolitan transportation applications. The recommended products include IW F 6330H/M, IWF 6320H/M, and IWF 3310XH/XM.

### **EZ Mesh/Controller Family**

The EZ Mesh/Controller family consists of industrial Wi-Fi access points for 4-hop Trusted/Secure Wi-Fi Mesh backbone and a controller for AP management. The EZ Mesh devices are equipped with IEEE 802.11ac MIMO technology that is ideal for the transmission of large data volumes. While the EZ Controller implements a professional and user-friendly utility for AP management and AAA service. With the capability to manage up to 50 APs and support for over 1000 user accounts, the EZ Mesh/Controller solution family perfectly fits the needs of industrial applications such as factory floors, treatment plants and utilities. The recommended products include IWF 800, IWF 600, and IWF 300.

#### New Product Highlights for Wi-Fi Mesh Solution

3

#### **IWF 300**

EZ Mesh Industrial IP30 AP, Dual RF, Dual Band, 1 x 802.11ac + 1 x 802.11a/b/g/n 2x2 MIMO



IWF 300 is a QCA9344-based industrial-grade AP/CPE/Router/EZ Mesh AP designed with IEEE 802.11a/b/g/n 2x2 MIMO and IEEE 802.11ac/an/a 2x2 MIMO technology. IWF 300 can deliver a data rate of up to 876Mbps. In addition, the RF (Radio Frequency) can support an output power of up to 27dBm for wider coverage range and wider service range. IWF 300 can also serve as a cost-effective solution for building Wi-Fi mesh networks with roaming speeds of up to 60km/h.

- Support up to 27dBm high RF power
- AP/Client/WDS/EZ Mesh modes
- 12V DC input
- Wide operating temperature range of -40°C to 80°C
- 1 x WAN and 4 x LAN GbE ports



#### **IWF 600**

IP68 Outdoor Mesh/AP/CPE, Dual RF, Dual Band, 802.11 ac/an+802.11 b/g/n



IWF 600 is an IP68-rated outdoor Mesh/AP/CPE with concurrent dual bands of IEEE 802.11ac and IEEE 802.11b/g/n with 3x3 MIMO technology. It's one of NEXCOM EZ Mesh product family. Featuring 4-hop

Mesh technology, NEXCOM EZ Mesh solution provides self-forming and self-healing capabilities for maintaining reliable and high throughput for Wi-Fi backhaul. With IEEE 802.11ac MIMO technology, IWF 600 provides high throughput and high-density Wi-Fi coverage to fulfill strong market demands for various bandwidth-intensive applications and to serve more clients.

- Multiple modes: AP/CPE/Mesh
- Concurrent IEEE 802.11ac + 802.11b/g/n with 3X3 MIMO, up to 1300+450Mbps data rate
- Redundant power supply of 802.3at PoE input and 24VDC input
- 1 x WAN+1 x GbE LAN ports
- IP68-rated water resistance
- Wide operating temperature range of -40°C to 80°C

5

#### **IWF 800**

Industrial Secure EZ Controller, Centralized Mid-scale AP Management



IWF 800 is an industrial secure EZ controller which provides central management for industrial WLAN networks. The IWF800 integrates "secure access control", "centralized WLAN AP management", and "AAA function" features and can manage up to 50 APs and more than 1000 user accounts. IWF800 fully fits the need of industrial-grade, central management network applications.

IWF 800 provides various grouping rules to support the implementation of different policies such as bandwidth control to manage both APs and clients. Also, IWF800 with auto-discovery feature is a layer 2 utility that detects and shows EZ Mesh AP devices. Thus, the maintenance of NEXCOM EZ controller/EZ Mesh family is made really easy.

- Centralized AP management and multi-level connections to up to 50 APs
- Authentication, authorization, accounting (AAA) support
- Redundant power supply: DC and IEEE802.3 at PoE
- 2 x GbE WAN ports failover
- 4 x GbE LAN ports
- Wide operating temperature range of -40 to 80°C



#### **IWF 503**

IP55 Outdoor AP/CPE, Single RF, 802.11ac/an/a 3x3 MIMO



IWF 503 is a cost-effective, IP55-rated outdoor AP/CPE router equipped with IEEE 802.11ac/an/a 3x3 MIMO technology and high RF output power. IWF 503 can deliver a data rate of up to 1.3Gbps and is available with two SKUs, one with internal patch antenna (IWF 503) and the other with external antenna (IWF 503D), both of which provide high gain outputs for long distance transmissions.

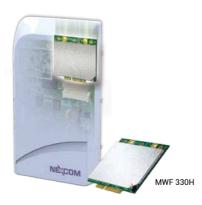
- Support up to 27dBm in the 5GHz frequency band
- Support up to 27dBm high RF power
- AP/Client Bridge/AP Router/Client Router/WDS modes
- 24V DC PoE input
- Wide operating temperature range of -35°C to 75°C
- 1 x WAN and 1 x LAN GbE port



#### **MWF 330H**

Add-on Wi-Fi Module for IWF 503

Industrial Wi-Fi Mini-PCIe Radio Module, Single RF, 802.11ac/an/a 3x3 MIMO



MWF 330H is a 3x3 MIMO IEEE 802.11ac/an/a mini-PCIe radio module with 1.3Gbps data rate and up to 27dBm high power output. It features a wide operating temperature range to provide reliable operation in industrial applications such as factory automation and transportation.

- Support up to 27dBm high RF power
- Qualcomm Atheros QCA9880 solution
- 3.3V and 5V DC input
- Wide operating temperature range of -40°C to 80°C
- FCC/CE certification

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#### **NIO100**

Certified Intel® IoT Gateway Based on Intel® Ouark X1021 Processor



NIO 100

NIO 100 is an industrial IoT (Internet of Things) gateway designed for cloud-based applications in the Industry 4.0 era. NIO 100 can collect information and data from sensors in wired or wireless networks, and transmit the data to the cloud over multiple diverse WAN (Wide Area Network) connections such as 3G, Wi-Fi or Ethernet for big data analysis.

Furthermore, NIO 100 can be equipped with customized interfaces and customized fieldbus protocol support to interface with different industrial sensors and devices. To meet environmental challenges in industrial applications, NIO 100 features a 9V to 36V wide-range DC power input and comes with dual LAN and multiple I/Os.

- Onboard single-core Intel® Quark™ SoC X1021
- Wind River<sup>®</sup> Intelligent Device Platform based on Wind River<sup>®</sup> Linux and McAfee Embedded Control (NIO 100/101) or Yoctobased BSP (NIO 100Y/101Y)
- Support Modbus TCP/RTU

- 1 x Mini-PCle on NIO 100/100Y for optional 3G/Wi-Fi module
- 2 x Mini-PCle on NIO 101/101Y for FBI and optional 3G/Wi-Fi modules
- 2 x 10/100 Ethernet ports, 2 x USB, 1 x RS232/422/485
- Built-in secure boot function
- Wide power input range of 9V to 36V DC
- Extended operating temperature from -20°C to 70°C



#### **NISE 2400**

Fanless System with 4th Gen. Intel<sup>®</sup> Atom™ Processor and Enhanced Graphics



Powered by the dual-core Intel® Atom™ processor E3827, 1.75GHz, NISE 2400 can provide excellent computing, power efficiency and graphics performance than previous generation Intel® Atom™ product family. NISE 2400 supports up to 8GB DDR3L memory and has several options for storage devices like CFast, HDD, SSD or mSATA and comes with 2 x COM ports (RS232/422/485) and 5 x USB ports (1 x USB 3.0).

This fanless system supports 2 x mini-PCIe modules for network and automation applications (with optional GbE LAN, Wi-Fi, 3.5G/4G LTE, USB and COM module). Such expansion versatility makes NISE 2400 a highly popular choice for kiosk, ATM, HMI, factory automation and IoT markets.

- Onboard dual-core Intel® Atom™ processor E3827, 1.75GHz
- Dual independent display with DVI-I and HDMI outputs
- 2 x Intel<sup>®</sup> I210IT GbE LAN ports with WoL, Teaming and PXE support
- 4 x USB 2.0, 1 x USB 3.0, 4 x RS232 and 2 x RS422/485 with auto flow control
- 2 x Mini-PCle socket for optional mSATA/Wi-Fi/4G LTE/3.5G
- Support -20°C to 70°C operating temperature range and 9V to 30V DC input

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#### **APPC 0840T**

Simplifies Machinery Supervision and Production Management



APPC 0804T

NEXCOM's HMI solution, APPC 0840T, is an 8-inch, all-in-one applied panel PC based on the low-power dual-core Intel® Atom™ processor E3826 that can offer smooth user experience across Windows, Android and Linux operating systems. The packaged HMI solution provides IEC 61131-3 programming with CODESYS while supporting optional fieldbus modules to manage existing PLCs and remote I/Os. It can also visualize and utilize machine functions, allowing better execution and control of manufacturing processes and improving OEE (Overall Equipment Effectiveness) and product quality.

The HMI solution enables on-site and remote manageability, data acquisition, and HMI visualization, thus increasing overall production effectiveness to customer orders. Featuring JMobile HMI, the HMI solution allows plant operators to access machines remotely; factory applications are no longer limited by workstation constraints. Furthermore, with CitectSCADA support, real-time production data can be visualized on site, allowing managers and supervisors to check latest information of the production loop and to make instant machinery adjustment locally.

Built for industrial use, the HMI solution provides voltage tolerance with wide voltage range support to deliver smooth, steady-state operation for continuous automated production.

- 4:3, 8" fanless LED panel computer with bezel-free touch panel and IP65-compliant front panel
- Intel<sup>®</sup> Atom<sup>™</sup> processor E3800 product family (up to quad-core)
- 2GB of DDR3L by default with support for up to 8GB
- 1 x CFast slot, 1 x 2.5" HDD bay, 1 x mini-PCle socket, 4 x COM,
   2 x GbE, 4 x USB, 2nd display-VGA, Line-out, 1 x fieldbus port
- Support fieldbus module, JMobile HMI, CitectSCADA and CODESYS SoftMotion (optional)
- Wide-range power input of 12V to 24V DC

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#### **ICES 501X**

Slim T10 COM Express ICES 501X Delivers Solid Performance in Missioncritical Operations



ICES 501X is a COM Express Type 10 mini form factor (55mm by 84mm) module based on the Intel® Atom™ processor E3800 product family. Built with industrial-grade components, ICES 501X features wide operating temperature range from -40°C to 85°C, along with 8GB of onboard DDR3L memory and 8GB of onboard EMMC memory. ICES 501X integrates Intel® Gen 7 Graphics to support an 18/24bit LVDS display at 1366 x 768 resolution and a DisplayPort signal for HDMI 1.4a or DisplayPort 1.2 configuration.

The high performance ICES 501X COM Express module supports versatile I/O interfaces like 2 x SATA, 7 x USB 2.0, 1 x USB 3.0, 1 x 18/24bit LVDS, 1 x DisplayPort (HDMI), 4 x PCIe x1 (Bus4 is optional), and 1 x Gigabit Ethernet.

- Wide operating temperature -40°C to 85°C and up to quad-core Intel® Atom™ processor E3845
- Support up to 4GB of DDR3L 1333/1600 memory and 8GB EMMC onboard storage
- Support LVDS, DisplayPort and Gigabit Ethernet
- Support 3 x PCle x1, 8 x USB 2.0, 1 x USB 3.0, SATA and LPC
- 55mm x 84mm board size

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#### **ICES 620X**

T6 COM Express ICES 620 Series with -40°C~85°C Supports Miniaturizes Intelligent Systems

ICES 620X is a Type 6 COM Express compact form factor (95mm by 95mm) module based on the Intel® Atom™ processor E3800 product

family. Built with industrial-grade components, ICES 620X features wide operating temperature range from -40°C to 85°C, and supports up to 4GB of DDR3L 1066/1333MHz memory. ICES 620X integrates Intel® Gen 7 Graphics to support a VGA display output of 2048 x 1536 resolution and two DisplayPort signals for HDMI 1.4a or DisplayPort 1.2 configuration.

The high performance ICES 620X COM Express module supports versatile I/O interfaces like 2 x SATA, 7 x USB 2.0, 1 x USB 3.0, 1 x VGA, 2 x DisplayPort (HDMI),  $4 \times PCle \times 1$ , 1 x Gigabit Ethernet, and  $1 \times HDA$ .

- Wide operating temperature -40°C to 85°C and up to quad-core Intel® Atom™ processor E3845
- Support up to 4GB of DDR3L 1066/1333MHz SO-DIMM memory
- Support LVDS, DisplayPort and Gigabit Ethernet
- Support 4 x PCle x1, 8 x USB 2.0, 1 x USB 3.0, SATA and LPC
- 95mm x 95mm board size



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#### **EBC 355X**

Fanless 3.5" Boards Bring GPU Image Processing and Wide Temperature for Embedded Systems

EBC 355X is a wide temperature 3.5-inch ECX embedded board based on Intel® Atom™ processor E3800 product family (formerly codenamed "Bay Trail-I"). EBC 355X features USB 3.0 ports and Intel® Gen7 Graphics with multi-display support. Aimed at embedded applications, EBC 355X offers low power consumption and supports wide operating temperature range of -40°C to 85°C. It also features a maximum memory of 8GB DDR3L SDRAM, 2 x SATA, 4 x COM, 4 x USB, 2 x GbE LANs and 2 x mini-PCIe expansions.

EBC 355X is ideal for battery-powered portable devices, multimedia

HMI panels, outdoor systems installed in harsh environments, home automation and thin clients.



- Wide operating temperature -40°C to 85°C and up to quad-core Intel® Atom™ processor E3845
- Dual mini-PCIe with USB IF for wireless communication (one mini-PCIe with SIM card slot)
- CE/ECC class B certified
- DC power connector (vertical type/optional horizontal type)
- Ready for system integration

- 7" WVGA TFT LCD monitor with resistive touchscreen
- Built-in TI® AM3352 720MHz processor
- Support Linux, Android and Windows Embedded Compact 7
- Dual CAN bus support with optional SAE J1939
- SAE J1113, ISO 7637-2 and SAE J1455 compliant for power design

VMC 1100 **Rugged Vehicle Mount Computer** Maximizes Mobile Workforce Efficiency



VMC 1100, a new generation 7-inch vehicle mount computer with dual-core Intel® Atom™ processor, is designed to increase operational efficiency and regulatory compliance for vehicle fleets.

> The VMC 1100 has an integrated Intel® HD Graphics, up to 4GB of DDR3L memory, internal storage and supports external storage expansion with microSD and data transfer through USB as well as wireless communication. 3G/LTE and Wi-Fi/Bluetooth connectivity are available through mini-PCIe expansion. It also follows SEA J1113, SAE J1455, and ISO 7637-2 standards to boost immunity to potential conducted interferences.

> The VMC 1100 has built up capabilities of information visualization, data logging, vehicle tracking and monitoring, and data communication. By consolidating functions of portable navigation devices (PND), electronics logging devices (ELD), and fleet telematics systems (FTS) onto one reliable hardware platform, the VMC 1100 enables mobile workforces including truck fleets, police patrols, and fire and emergency medical service (EMS) squads to excel at work.

- 7" WVGA TFT LCD monitor with resistive touchscreen
- Built-in dual-core Intel® Atom™ processor E3825, 1.33GHz
- Support a variety of wireless communication and GPS tracker
- Dual CAN bus support with optional OBD II (SAE J1939)
- SAE J1113, ISO 7637-2 and SAE J1455 compliant for power design

#### **VMC 100**

**Robust and Economical Vehicle Mount Computer Simplifies Fleet Operations** 

VMC 100 is a 7-inch all-in-one vehicle mount computer designed for transportation applications as the economical solution to maximizing fleet efficiency and safety. VMC 100 features ARM® Cortex™-A8 processor, an open embedded system of Android, Linux, or Windows Embedded Compact 7, high resolution LCD with a brightness of 400 nits and a 4-wire resistive touch sensor. VMC 100 offers real-time communication for traffic control through optional Bluetooth, Wi-Fi and WWAN module expansions, and provides RS232/422/485, USB 2.0, GPIO and LAN interfaces to link with peripherals. Additional VESA75 is supported to aid installation in limited vehicle space using RAM mount kits.



# VTC 7230/7240 Fuse Telematics with IoT for Smart and Safe Journey



VTC 7230-BK and VTC 7240-BK feature powerful 5th generation Intel® Core™ processor i3-5010U and i7-5650U (formerly codenamed "Broadwell"). These in-vehicle computers boast numerous telematics features to support public security (mobile video surveillance) and fleet management, and equip the performance to drive ADAS (Advanced Driver Assistance Systems) or driver behavior analytics via the integration of different external sensors and CAN/OBD II interface.

VTC 7230-BK and VTC 7240-BK offer three SIM card support that can function as backup connection or aggregated together for faster data transfer speeds. In addition to fast data transmission, VTC 7230-BK and VTC 7240-BK also support two-way voice communication for fleet management, as well as intelligent power management features to enable wake-up on ignition, RTC timer, SMS and dial up.

To provide ample storage for large surveillance data, the in-vehicle computers come with dual external HDDs with high anti-vibration performance. In addition, to keep the surveillance data out of reach, VTC 7230-BK and VTC 7240-BK feature two DI and DO channels and an event button signal that can be connected to alarms and sensors that trigger in the event of intrusion, allowing the in-vehicle computers to send emergency notifications, even when the computer systems are off.

- Dual-core Intel® Core™ processor i3-5010U/i7-5650U
- Three SIM cards + dual WWAN module support
- Dual externally accessible SATA 3.0 SSD/HDD
- Voice communication and wake on RTC and SMS via WWAN module
- Built-in CAN 2.0B. Optional OBD II module (SAE J1939)

NCr-305-VHR
3MP Mid-Range ANPR/LPR Camera,
Smart LPR Modes, P-Iris, True WDR

NCr-305-VHR is a new ANPR/LPR camera that offers excellent 3MP image quality and clear image captures of license plate numbers on cars traveling

up to 100km/h. NCr-305-VHR can overcome various light conditions and capture license plates clearly within the distance range of 10m to 20m without overexposure. Furthermore, Smart LPR mode is available to attain optimized image results under the environmental variations during the course of a day. NCr-305-VHR features an IR vandal bullet type design and is compliant with IK10 and IP66/IP67 for critical environments, making it an ideal solution for fortifying security in city surveillance applications.

- 30fps@ 3MP, full HD 1080p@ 60fps
- Smart LPR modes to attain optimized image
- License plate capture distance 10m to 20m
- High-speed car capture up to 100km/h
- Advanced P-Iris



# NViS 1204/1208/1328 NVR with Built-in PoE Solution

The NViS 1000 series supports Intel® Celeron® processor 847E or Intel® Core™ i3-2340UE processor, and two internal 2.5-inch SATA HDDs with up to 2 TB surveillance-grade storage capacities. Equipped with built-in PoE (Power over Ethernet) ports, the NViS 1000 series can reduce the need for extra PoE switches, which makes for a tidy and cost-effective installation with network camera. NViS 1204 is available with four PoE ports while NViS 1208 and NViS 1328 are equipped with eight PoE ports, allowing easy plug-and-play installation of network cameras.

- Intel® Celeron® processor 847E, 1.1GHz, or Intel® Core™ i3-2340UE processor, 1.3 GHz
- Support maximum of 16GB RAM
- Dual display of HDMI and VGA
- 2 x 2.5" SATA HDD with service door
- Up to 24 TB storage capacity with software RAID 0/1/10
- 2 x Intel Gigabit Ethernet
- 4 x USB 2.0, 1 x mini-PCle slot
- 4 to 8 Gigabit PoE ports, IEEE 802.3af 15.4W per port



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#### NViS 5604-i7/5604-i5

Large-storage NVRs for Full-HD Video Recording



The NViS 5604 series supports 4th generation Intel® Core™ i5/i7 processors to deliver security surveillance with enhanced performance in live view, recording, and instant playback. Supporting Intel® Core™ i5-4570TE or i7-4770TE processor, both NViS 5604 models are able to record up to 64 cameras in real-time at full HD resolution. To offer ample storage for full HD surveillance, the NViS 5604 series equips 4 hard drive bays and offers up to 24 TB of video storage, as well as support for surveillance-class hard drives made specifically for write-intensive, always-on, and 24/7 surveillance applications.

- Support 4th generation Intel® Core™ i5/i7 processors
- Dual Intel® Gigabit Ethernet ports
- Dual display of HDMI and VGA
- 4 x 3.5" SATA HDD bays
- Up to 24 TB storage capacity with software RAID 0/1/10

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## **NDiS A322/ AC22**

Robust All-in-one Passenger Information Signage



NDiS A322/ AC22

NDiS A322 is emerging as a useful tool in enhancing transportation experience from a passenger point of view, while making the process

easier for transportation conductors. NDiS A322 can engage passengers with real-time messages, tourist guidance and public information, while companies can use NDiS A322 to deliver dynamic advertising to improve branding and exposure.

- Intel<sup>®</sup> Celeron<sup>®</sup> processor N2807
- Wide-range power input of 9V to 36V DC
- Front bezel compliant with IP54
- Vandal-proof glass
- Support Wi-Fi, 3G and GPS modules
- Daisy chain to AC22 second display (optional)

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#### IFA 3610/2610/1610

The HENGE™ Industry Firewalls Ward off Threats for Critical Assets

The HENGE™ solution is a series of fully integrated industry firewalls with VPN router functionality. The series consists of IFA 3610, IFA 2610 and IFA 1610, which are 5-, 3- and 2-port firewall routers respectively. These broadband-capable firewall routers offer stateful packet inspection (SPI) firewall, denial-of-service (DoS) and distributed denial-of-service (DDoS) protection, intrusion prevention, portscan detection, as well as real-time alerts for additional protection of machinery and equipment installed on the secure side of the firewall. Equipped with IPsec and SSL VPN function, the firewall routers provide a secure, remote access connection to help machine builders/system integrators easily execute remote monitoring and maintenance tasks.

Furthermore, the 5-port IFA 3610 features a rugged design and wide operating temperature range of -20°C to 70°C for installation in harsh environments. By combining firewall, VPN functionality and rugged design, IFA 3610 is the ideal endpoint connectivity and security solution for industrial automation, process control, energy and medical instrument management applications.

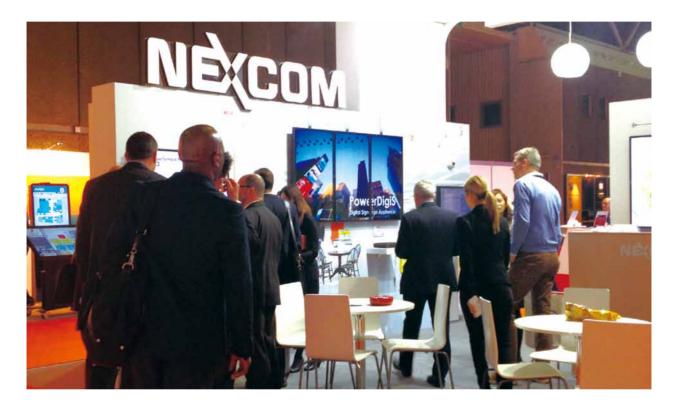
- 5-port/3-port/2-port VPN router
- Stateful packet firewall
- Intrusion detection/prevention
- Secure remote access through SSL VPN

RS232/485 serial communication

Unified VPN user management

IFA 3610

# NEXCOM's Highly Responsive Digital Signage Players Wow Audiences with Quick Interactive Response



A t the Integrated Systems Europe (ISE) exhibition, NEXCOM's digital signage players demonstrated a vivid representation of signage scenarios covering from responsive retail stores, transportation signage, to quick service restaurants, amazing visitors with stunning experiences.

NEXCOM's responsive store received many inquiries. Visitors enjoyed unprecedented experience and witnessed how NEXCOM's responsive store offers better customer engagement, in-time incentives, and even provide personalized shopping recommendations to audiences. Equipped with four HDMI display outputs, NEXCOM's digital signage player NDiS B842 displayed

images and videos stretched seamlessly across a three-display video wall. Fueled with in-store intelligent video analytics, NDiS B842 showcased how it can send responsive advertisement messages to target audience to drive better marketing results and revenue.

Furthermore, NEXCOM's Android™-based digital signage player NDiS B114, demonstrated for digital shelf management system in NEXCOM's responsive store, made its debut at ISE and became one of the highly sought-after products. Powered by a quad-core Freescale™ i.MX 6Quad application processor, NDiS B114 can show product details on display racks and

increase shoppers' awareness of special offers at checkout counters, enhancing instore shopper experiences and turning foot traffic into sales.

NEXCOM's first all-in-one in-vehicle signage panel PC NDiS A322 also garnered widespread interest at ISE with its compact design. Compliant with IP54 and in-vehicle industrial standard, NDiS A322 showcased how it can provide real-time passenger information to enhance travel experience. Powered by Intel® Celeron® processor N2807, NDiS A322 vehicle signage is designed in a compact form factor, maintaining the industrial requirements for high availability, wide temperature operation, and high anti-vibration protection.

## NEXCOM Robust and Secure Transportation Computers Fulfill Demands at InnoTrans

A EXCOM's transportation computer nROK series took the spotlight at InnoTrans. NEXCOM demonstrated a variety of transportation solutions covering from train surveillance and device monitoring, passenger information system (PIS), to eBus with great customer interest and response.

All train professionals gathered at InnoTrans looking for the latest technology to fulfill the demands of a safe and happy journey for passengers. At the event, NEXCOM's train surveillance solution received strong responses from field experts. NEXCOM's

latest train PC nROK 5500 presented in surveillance application became one of the highly sought-after products. The EN50155-certified nROK 5500 features powerful Intel® Core™ processors, three 3G and Wi-Fi connections, eight PoE ports for IP surveillance cameras, large data storage, robust fanless rackmount enclosure, and extended operating temperature support. This combination of robust and high performance design was what attracted the visitors the most.

NEXCOM's nROK 3000 for passenger infotainment systems (PIS) also gathered

widespread interest with its compact and robust design. NEXCOM EN50155 compliant fanless transportation computer nROK 3000 can enable control centers to disperse real-time information to train stations, delivering passenger infotainment services including news updates, weather conditions, and railway timetables to enhance the traveling experience.

To ensure all train devices function well, the compact nROK 3000 train PC allows drivers to acquire real-time status of electronic devices and oversee the moving train from the driver cab.



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