⌂ **Directory**

Data & Monitoring

NEXCOM

Built to Last, Built for AI

The ATC 3750-IP7-8M Delivers Rugged Performance for AI Transportation

Introducing the ATC 3750-IP7-8M, the rugged AI powerhouse designed to revolutionise automated vehicle technologies.

Equipped with the high-performance NVIDIA® Jetson AGX™ Orin SOM, this cutting-edge device delivers an impressive 200/275 TOPS workload on AI processing and inference. With its IP67 rating, compact size and 9~36VDC/24VDC rail with IGN control, the ATC 3750-IP7-8M is the perfect in-vehicle/rail companion. It features 8 MIPI/GMSL2 for seamless access to MIPI CAM sensors, along with a variety of rich peripheral ports including GbE/2.5GbE, USB3.2, isolation CANBus, RS232, console, DI/DO, OTG and HDMI. Whether it's ADAS in transportation/construction, ANPR, AMR, machine learning or railway safety assurance, the ATC 3750-IP7-8M has got you covered.

Unleashing AI Power with High-Speed MIPI Connectivity

MIPI comes into play by providing a high-speed, low-latency connection for advanced driver-assistance systems (ADAS). This is achieved by enabling communication between various sensors, including high-resolution cameras, LiDAR and radar, and the processing unit. Besides, 5G and Wi-Fi options enable over-the-air collaboration with cloud systems for AI model retraining.

Extreme Environments, Unmatched Performance

What truly sets these AI-powered computers apart is their ability to thrive in even the harshest environments. Thanks to its fanless design and robust thermal solutions, the ATC 3750-IP7-8M can sustain intensive workloads in harsh, rugged environments. This IP67-rated compact computer is designed to withstand shock, vibration, dust and temperature extremes from -25ºC to 70ºC. Plus, it's certified by CE/FCC Class A, UKCA, E-mark and EN50155/EN45545-2 for your peace of mind.

Unleashing the Potential of Software-Defined Controller

For edge AI platforms that use Jetson modules, NEXCOM offers NEXCOM Accelerator Linux (NAL). NAL is an optimised Ubuntu 20.04 LTS derived from the Jetpack SDK. Programmers can access supported 5G, Wi-Fi, GNSS, IMU, CAN bus, MCU, I/O interfaces and other peripherals through in-house design utility and APIs. This allows developers to use physical signals from peripherals and sensors as data sources for AI inference engines, with minimal knowledge required for hardware installation and configuration.

With the NVIDIA JetPack 6.0 upgrade, it also features new Jetson Platform Services, which add foundational and AI analytics services, generative AI capabilities, and multiple building blocks such as the Video Storage Toolkit (VST) and NVIDIA DeepStream software development kit. This simplifies solution development for developers by eliminating the need for repetitive development on NVIDIA Jetson, empowering them

to quickly assemble full-featured edge AI systems and manage edge AI applications. Through REST APIs, developers can easily access a variety of microservices, enabling the construction of unified cloud-to-edge vision AI applications. This functionality delivers the seamless replication of cloud-developed microservices and trained AI models to edge devices using IoT gateway and OTA.

NEXCOM's hardware and software specifications are meticulously engineered to overcome the challenges encountered in real-world applications. For instance: Surround View System and Anti-Collision System for Mining Vehicles provides a comprehensive panoramic view and issues collision warnings to prevent accidents. Agriculture AMRs are equipped with advanced capabilities for crop recognition and RTK precise positioning, enhancing agricultural efficiency. In conclusion, upgrade your AI journey with the ATC 3750-IP7-8M and experience unparalleled performance, durability and versatility. Don't miss out on this game-changing device.

ATC 3750-IP7- 8M
• NVIDIA® Jetson AGX Orin™
• 8-port MIPI/GMSL2 & 2.5GbE (X-coded) for MIPI CAM/IP CAM/LiDAR sensors
• IP67 rated, rugged and compact
•9~36VDC & 24V rail combined

ATC 3750-IP7-WI8MR
• NVIDIA® Jetson AGX Orin™
• 8-port MIPI/GMSL2 & 2.5GbE (X-coded) for MIPI CAM/IP CAM/LiDAR sensors
• IP67 rated, rugged and compact
• 24~110VDC w/ isolation

Maximise In-Vehicle/Railway Computer's Usability and Reliability with VTK-SCAP Supercapacitor UPS

VTK-SCAP is a specialised UPS (uninterrupted power system) designed for in-vehicle and railway computers, providing up to six minutes of backup power in case of power loss. It utilises a supercapacitor design, offering a 10-year lifespan and up to 500,000 battery cycles. Compliant with the E-Mark and EN 50155 standard, it can be operated in extreme temperatures ranging from -35ºC to 80ºC, helping ensure uninterrupted operation of critical systems. This reduces downtime and maintenance costs.
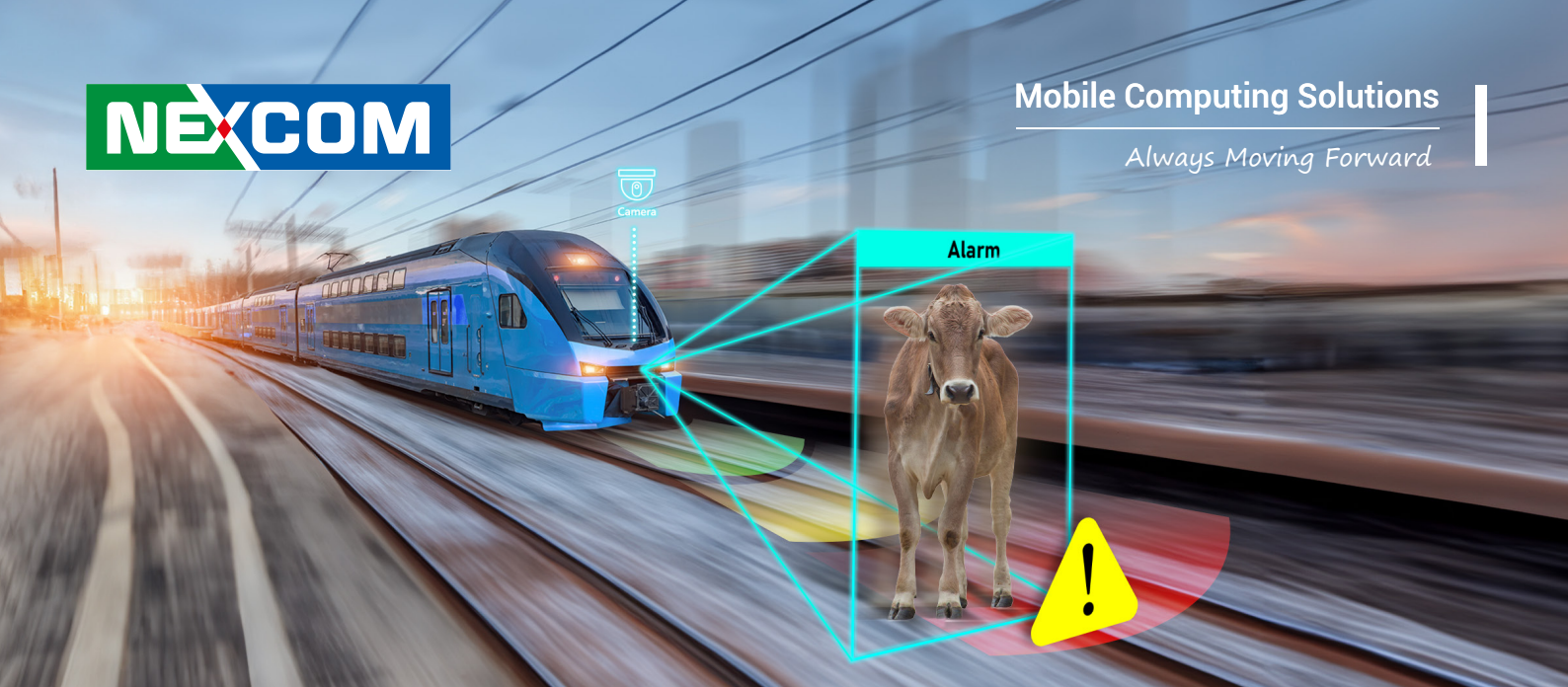
VTK-SCAP is expandable, allowing connection with up to three expansion units, extending the backup time to six minutes for a 60W system at 25ºC. Additionally, included system status monitoring utility enables service personnel to easily check UPS health, charge/discharge status, capacity and other information simultaneously, providing users with the most real-time system status and facilitating management purposes. It supports over-voltage and over-current protection mechanisms, which automatically limit the system charge when the input voltage goes above 56V, ensuring there will be no safety issues caused by excessive instantaneous voltage.

VTK-SCAP
• Provides up to 6 minutes of backup power for a 60W system
• Utilises supercapacitor for a 10-year lifespan and 500,000 battery cycles
• Operates in extreme temperatures ranging from -35ºC to 80ºC
• Expandable to extend backup time
• UPS status monitoring utility
• E-Mark and EN 50155 certified

Innovative Railway Solutions:
Powering Tomorrow's Mobility

AI has become an essential component of automated vehicle technologies. NEXCOM offers high-performance railway computers with built-in NVIDIA® Jetson AGX™ Orin SOM, enabling robust AI processing and inference capabilities for AI-aided transportation applications such as railway safety assurance.

In addition, featuring a modular expansion design, NEXCOM equips railway computers with an extensive array of interfaces to adapt to different scenarios. These computers can be rapidly customized for applications: passenger Wi-Fi with Wi-Fi 6 and 5G technology, surveillance systems with PoE support, and 10GbE network backbones. All the solutions will be demoed in NEXCOM booth in InnoTrans 2024.

Edge AI Solutions with NVIDIA® Jetson™ Platform for Transportation Safety

ATC 3750-IP7-WI6CR
- NVIDIA® Jetson AGX Orin™
- 6-port GbE PoE+ for IP CAM/LiDAR sensors optional 1-port 10GbE
- IP67 rated, rugged, and compact

ATC 3750-IP7-8M
- NVIDIA® Jetson AGX Orin™
- 8-port MIPI/GMSL2 & 2.5GbE (X-coded) for MIPI CAM/ IP CAM/LiDAR sensors
- IP67 rated, rugged, and compact

ATC 3540-IP7-AI4CR
- NVIDIA® Jetson Orin™ NX
- 4-port GbE PoE+ for IP CAM/LiDAR sensors
- IP67 rated, rugged, and compact

Modular and Rapidly Customized Solution with Intel® 12/13th Gen Core™ Platform

nROK 7270
- Intel® 12/13th Gen Core™ processor
- 5G/Wi-Fi, PoE, 10GbE, daughter board expansion support
- Designed with DDR5, excellent memory bandwidth lower latency

nROK 7271
- Intel® 12/13th Gen Core™ processor
- 5G/Wi-Fi, PoE, 10GbE, daughter board expansion support
- Wide voltage input 24~110VDC (w/ isolation)
- Designed with DDR5, excellent memory bandwidth lower latency

Smart Railway UPS

VTK-SCAP-AR-M
- Smart-UPS with SuperCap (Master)

VTK-SCAP-S
- Smart-UPS with SuperCap (Slave)

*Note: 24V@8A max (200W, 1 x master + 3 x slave)

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