NEXCOM

Revolutionising Urban Mobility: NEXCOM's AI-Powered In-Vehicle Computers, VTC 7270-C8, Propel Bus Services into a Safer, Efficient and Enhanced Driving Experience

The continuous exponential growth in the global population has created challenges for the traditional transportation system as it struggles to improve traffic congestion, public safety and reduce pollution.

With a growing emphasis on enhancing safety, efficiency and driving experience, one significant development in public transportation has been the integration of AI-powered in-vehicle computers within buses. This technological evolution has emerged in response to a confluence of factors that have reshaped the landscape of public transportation.

Safety Imperative

Safety is paramount in the realm of public transportation. Buses, being large and often operating in congested urban environments, require advanced systems to mitigate accidents and safeguard passengers, pedestrians and other road users. Traditional onboard systems lacked the capability to respond dynamically to real-time traffic conditions, potential hazards and unforeseen obstacles.

To ensure public safety, multiple cameras are used to record and analyse images. NEXCOM VTC 7270-C8 supports up to 8 IP cameras by PoE ports. This NVR utilises an NVMe SSD as its internal storage while all passengers and driver states are continuously tracked through 5G upload. It supports GNSS and dead reckoning in addition to Dual LTE/5G and Dual Wi-Fi. Equipped with the latest 12/13th generation Intel® Core™ i processor, VTC 7270-C8 offers 30% more computing power than its predecessor. With Intel® OpenVINO and Intel® Deep Learning Boost, it accelerates high-performance image recognition and

Pedestrian detection

Blind spot camera for safety

AI/deep learning inference workloads. This facilitates ADAS in identifying, recognising and predicting vehicles' internal or external abnormalities via video surveillance.

AI-powered in-vehicle computers bring an unparalleled level of intelligence to buses, enabling them to analyse complex data from sensors, cameras and other sources to make split-second decisions that optimise safety. These computers can detect pedestrians, cyclists and other vehicles, predict potential collisions, and even engage in autonomous emergency braking when necessary.

Efficiency Enhancement and Environmental Responsibility

With the rise of urbanisation, cities are grappling with increased traffic congestion and pollution. VTC 7270-C8 address these challenges by optimising route planning and driving behaviour. The buses can utilise AVL via GNSS, 5G, to provide smart public transit and intelligent traffic system (ITS) to compute the fastest route. Supporting CAN bus, AI-powered in-vehicle computers can also retrieve ECU information, vehicles speed, fuel volume, etc., to improve better eco-driving. By optimising driving patterns and routes, these systems can minimise fuel consumption and emissions. Furthermore, their ability to monitor vehicle health in real time ensures that maintenance is conducted proactively, reducing the chances of breakdowns that can lead to unnecessary emissions.

Wi-Fi hot spot

NVR for surveillance

Passenger Experience Revolution

Modern passengers demand a seamless and convenient travel experience.

To facilitate both cash and cashless transactions, NEXCOM VTC 7270-C8 supports bus ticketing payment systems and cash receipt printers by RS-485 interface. It also utilises 5G technology to transmit GNSS signals efficiently to the fleet management centre. The fleet management centre uploads data to the server, generating AVL and real-time bus schedules for passengers, and combining digital signage ads at the bus stop.

Compliant with MIL-STD-801H, the compact and fanless NEXCOM VTC 7270-C8 has a wide operating temperature range and is secured by TPM2.0. Provided with rich I/Os, expansion slots and LTE/5G, it can be fitted in various ITS applications; an alternative version, the NEXCOM VTC 7260-xC4 featuring an 11th gen. Intel® Core™ CPU, is also available. Experience the benefits of powerful computing and efficient management with this upgraded telematics computer, ultimately helping vehicles drive towards a smart city.

Always Moving Forward with NEXCOM

NEXCOM's Mobile Computing Solutions (MCS) has extended and developed many products for use in AI, 5G and safety-related applications. We're creating a safer working environment and saving operational costs through improvements in logistics for more efficient fleet management. We support our business partners to further promote edge AI computing for ADAS, AMR and autonomous driving.

Main Spec Comparison

Model	CPU	Memory	LAN	PoE	Storage
VTC 7260-xC4	11th Generation Intel® Core™ i	2 x SO-DIMM, DDR4-3200MHz	1 x GbE, RJ45	4 x 2.5GbE, RJ45	- 1 x 2.5" SSD - 1 x mPCIe for mSATA (SATA 3.0) - 1 x M.2 2242/2280 NVMe SSD
VTC 7270-C4/C8	12/13th Gen Intel® Core™ i	2 x SO-DIMM, DDR5-4800MHz	1 x GbE, RJ45	4/8 x 2.5GbE, RJ45	- 2 x 2.5" removeable SSD - 1 x M.2 2280 NVMe SSD

Click **here** to watch our video.

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Mobile Computing Solutions

Always Moving Forward

5G 5G NR | **Wi-Fi (Multi)** | **Wide Voltage** | **Wide Temp.** | **WWAN (Multi)** | **CANBus** | **PoE** | **Fanless** | **E13 Mark** E-Mark
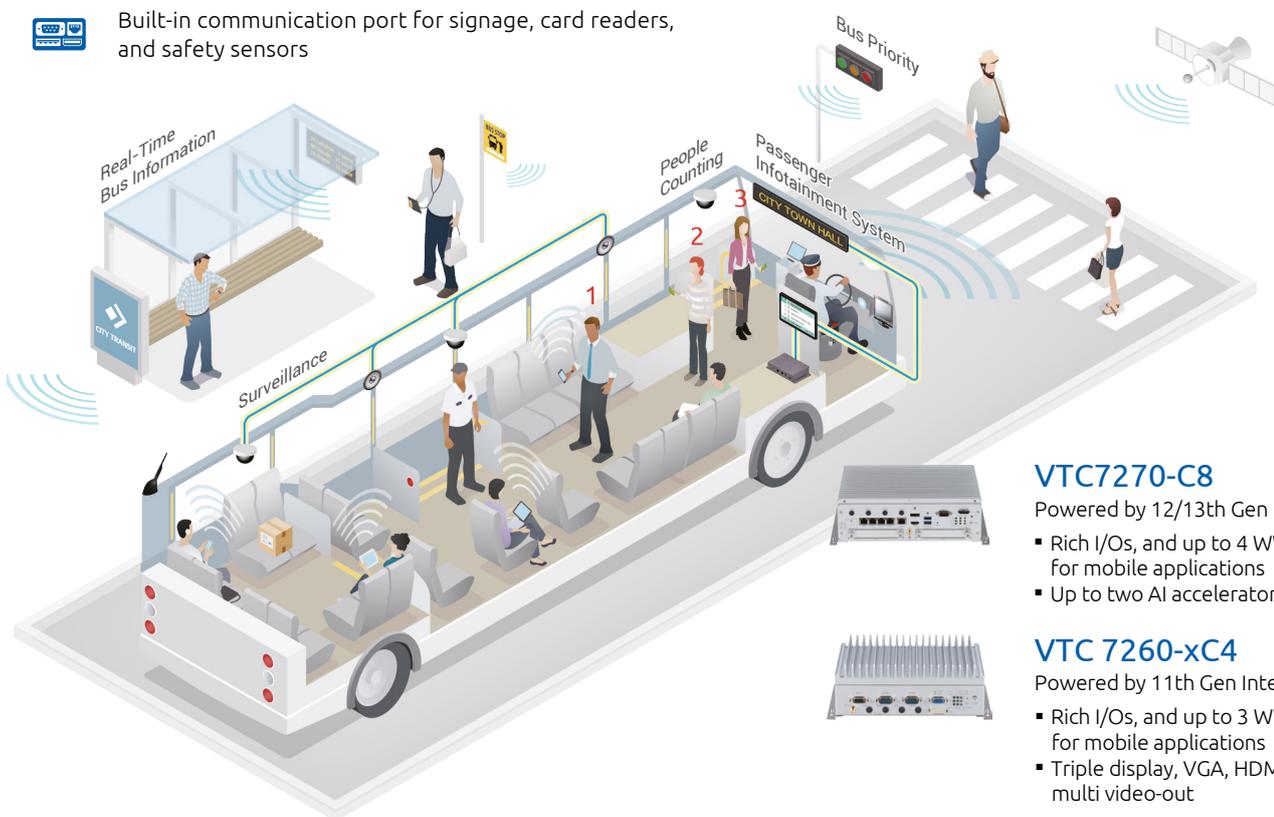
NEXCOM's Solutions

- PC-based in-vehicle NVRs for real-time surveillance
- Built-in GNSS with dead reckoning function for accurate positioning
- Built-in communication port for signage, card readers, and safety sensors

- Support multiple Wi-Fi and cellular modules for uninterrupted internet connection
- In-vehicle HDMI extender over IP for PIS and infotainment

VTC7270-C8

Powered by 12/13th Gen Intel® Core™ i

- Rich I/Os, and up to 4 WWAN/WLAN for mobile applications
- Up to two AI accelerator as optional

VTC 7260-xC4

Powered by 11th Gen Intel® Core™ i

- Rich I/Os, and up to 3 WWAN/WLAN for mobile applications
- Triple display, VGA, HDMI and DP for multi video-out