



COMMITTED TO CUSTOMER SUCCESS

Think Big,
Think IoV



AI



5G



2022 Mobile Computing Solutions Product Selection Guide

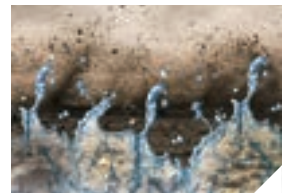
www.nexcom.com



Our Product Portfolio

Product Series

- AI Edge Telematics Solution
- Vehicle Telematics Computer
- Railway Computer
- Vehicle Mount Computer
- Modular Vehicle Computer System
- Vehicle Mount Display
- In-Vehicle Networking
- In-Vehicle HDMI Extender over IP



ATC Series

Advanced Telematics Computer w/ GPU

- Designed for AI applications: ANPR, video analytics, and autonomous driving
- Selected NVIDIA GPU, MXM, Google TPU, and Hailo module add-ons
- 5G/LTE, Wi-Fi 6/6E, BT, CAN/OBD, GNSS + DR, PoE, and multi-SIM integration



VTC Series

In-Vehicle Telematics Computer

- General purpose, high-performance telematics computer
- 5G/LTE, Wi-Fi 6/6E, BT, CAN/OBD, GNSS + DR, POE, and multi-SIM integration
- IP65/67 ingress protection
- Power management
- AI applications with add-on GPU card
- Backup battery



nROK/aROK/vROK Series

Railway Computer

- Box and panel PC with fanless and rugged design
- 5G/LTE, Wi-Fi 6/6E, BT, CAN/OBD, GNSS + DR, POE, and multi-SIM integration
- Optional isolated 24~110VDC power input
- AI applications with add-on GPU cards
- EN50155 & EN45545-2 certifications



MVS Series

Modular Vehicle Computer Systems

- Modular CPU board + I/O board + expandable I/O board
- Flexible integration of LTE, Wi-Fi 6/6E, BT, POE, and other I/Os
- Easy customization of different I/O interfaces, with quick respins for faster time-to-market



VMC Series

Rugged Vehicle Terminal

- Driver's operational display
- Designed for outdoor applications
- Full IP65 certification
- IK08-rated screens
- Vibration-, shock-, dust-, and water-resistant
- 5G/LTE, Wi-Fi 6/6E, CAN/OBD, GNSS + DR



PoE and 10G LAN Solutions

- 2 to 8 PoE ports for entry-level to high-end VTC/MVS/ATC/nROK models
- Designed for video surveillance, ANPR, ADAS, and video analytics applications
- 802.3af/at compliance with RJ45 or M12 connector (D, A, X-coded)
- Mobile PoE switches and cards



Premium Solutions

- IP65/IP67 protection against water and dust
- Reliability and longevity for critical applications
- IK Ratings (e.g. IK08) protection provided by panel PC against external mechanical impacts to display
- Performing conformal coating protection against moisture, dust and chemicals



Our Core Competencies -

Building a Foundation for Interconnected IoV and Value-Added Innovation



Premium Computing Design Capability

Computing power drives vehicle applications, which is why NEXCOM offers a wide range of computing platforms to meet different vehicle needs

- RISC platform (NXP i.MX6, i.MX8, Rockchip, TI)
- Intel Atom® platform (Bay Trail, Apollo Lake, Elkhart Lake)
- Intel® Core™ i platform (Core i 8th, 9th, 12th, 13 th Gen)
- Intel® high-end Xeon® platform
- NVIDIA® Jetson TX2, Xavier™ NX (SOM) orintegrated
- Over 20 years of experience in designing rugged devices and vehicle/ railway computers

Software Solutions

- SDK (API, programming guide, demo AP) supports for Linux, Android and Windows OS
- BSP (bootloader, kernel driver, OS (Android, Yocto, Ubuntu))
- MCU (customized MCU firmware for small quantities)
- BIOS (customized BIOS for small quantities)
- Secure System Development (TPM, Secure Boot, Boot Guard)

RF Communication Expansion

For the array of wireless usage cases, NEXCOM specializes in RF communication expansion, providing a comprehensive series of proprietary mini-PCIe/M.2 modules, allow users maximum flexibility in optimizing vehicle configurations

- GNSS (RTK, Dead reckoning)
- NB-IoT, 4G LTE, 5G NR
- DSRC/C-V2X, LoRa
- Wi-Fi 6/6E

Reliability Quality

- Fanless design and IP67 protection for extreme environmental conditions
- IK08 impact resistance rating on external mechanics
- Meets CISPR25 standard
- Vehicle (E mark) and railway (EN50155, EN45545-2) certifications
- CE EMC (Electromagnetic Compatibility) and FCC conducted and radiated emissions certifications
- Supporting more certifications (Safety, RED, LVD, MIL-STD-810, etc.)

Specialization in AI Technology

- Specialize in NVIDIA® (GeForce/Quadro, PCIe x16/MXM, Jetson), Google Coral (M.2, mini-PCIe), and Hailo AI accelerators (M.2, mini-PCIe, onboard)
- Support partners to drive deeper customer engagement in AI + mobile edge computing applications
- Provide edge processing and AI capabilities to software partners/developers to innovate and create new business models

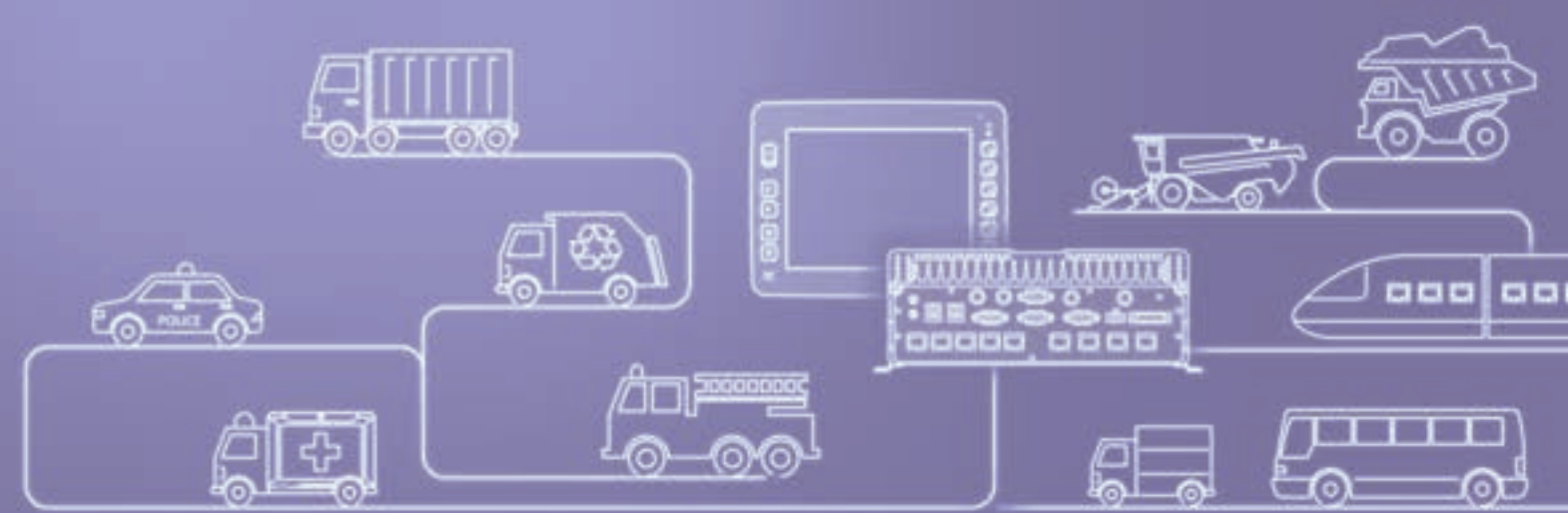
OEM/ODM Services

- Over 20 years of experience in industrial-grade computer design and manufacturing
- Seasoned design capabilities in customized system and software integration
- Certificated, 100%-owned manufacturing facilities in Taiwan
- Expertise in mobile transport technologies, with vertical domain know-how
- Acceptance of small to medium quantities, with fast time-to-market delivery



Core Competency : Premium Design

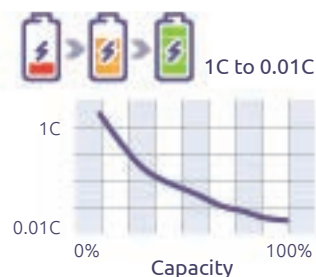
For Rugged Devices and Vehicle/Railway Computers



Uninterrupted Power Means Uninterrupted Operations

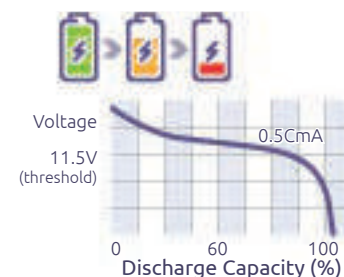
Quantization for Auto C-rate Charge

- Overvoltage protection
- Reverse voltage protection
- Quick/slow/auto charge selectable



Discharge with Auto-calibration

- Predict dynamically battery state of charge
- Over-discharge protection
- Threshold configuration



Battery Management

- Health report: capacity, voltage, temperature, cycles, etc.
- Low-voltage vehicle battery protection
- Over-heat protection
- Charging or non-charging mode at IGN off status
- Delay time setting available



External Battery

Intelligent and rechargeable battery kit provides uninterrupted power and capacity information via RS-232 and SMBus interface



Internal Battery

Optional intelligent and rechargeable internal battery provides uninterrupted power for 10 to 15 minutes



Internal SuperCap

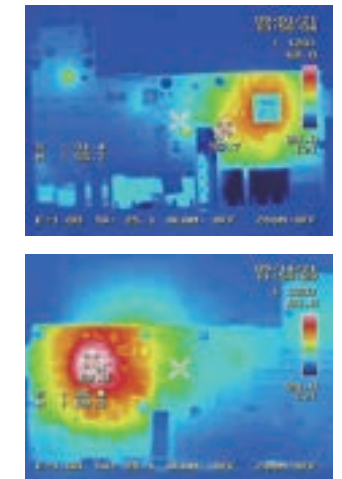
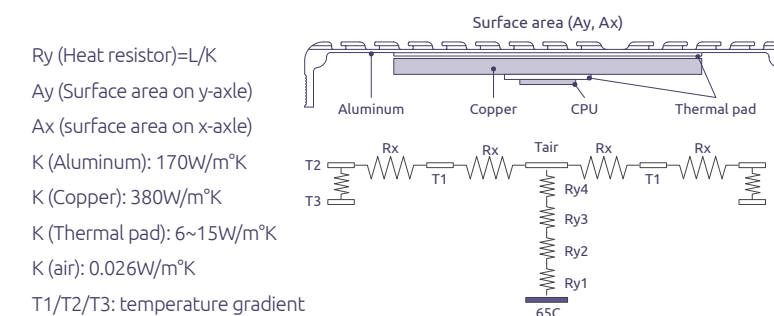
Built-in supercap for 3-second protection against temporary voltage dips



Smart and Effective Cooling System

Thermal Model Created and Thermal Dynamic Simulation

- Feasibility phase – Thermal capacity evaluation
- Evaluation phase – CAD/CAM simulation
- Design phase-refine/thermal efficiency



Smart Fan

- Power efficient: RPM adjusts to temperature changes
- Quiet: lower speeds at lower temperatures
- Convenient: easy setup in BIOS
- Highly reliable: longer lifetime



Heat Pipe and Heatsink

- More efficient thermal conductivity with copper pipe
- Better heat dissipation with heatsink dedicated to high-temperature components



Strong Ingress Protection: IP65/IP67

Dustproof and Water Resistant

- Protection against dust, water, and chemicals from cleaning or accidents
- Mechanical casings prevent intrusion and accidental contact
- Inhibits deterioration and damage from damp and dusty surrounding



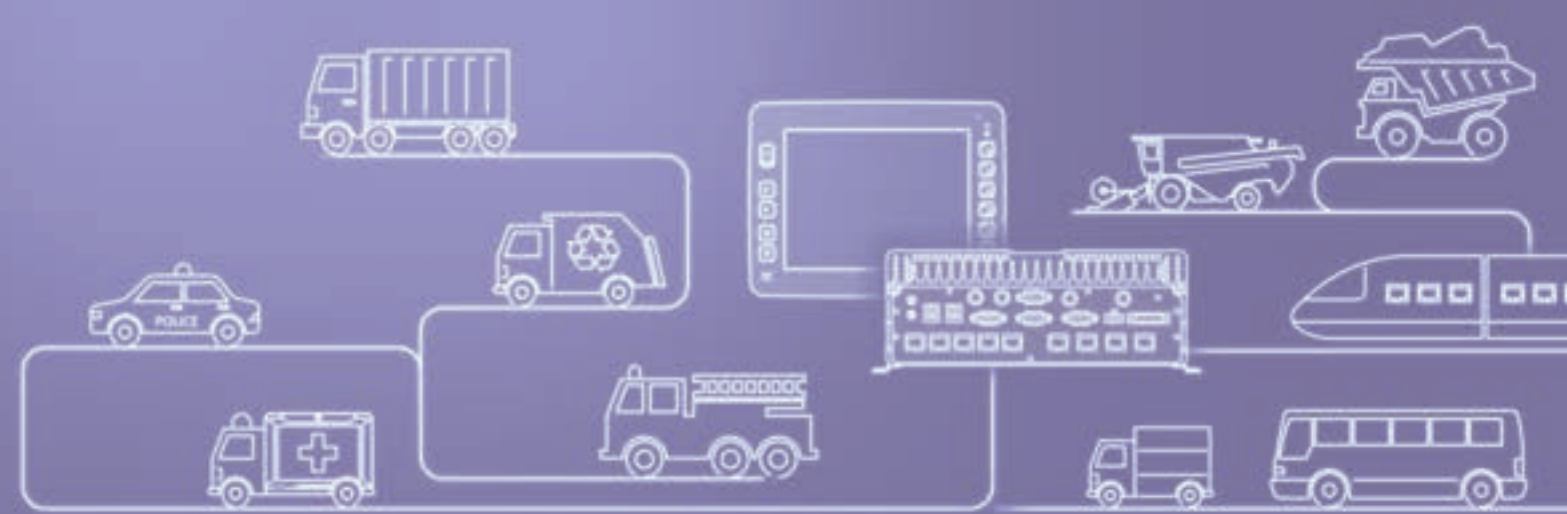
Industrial Touch Panel Protection

- Impact resistant up to IK08/09 grade
- Enhanced touchscreen (3mm thickness) is operable with various gloves – and regardless of water spillage
- IP65/IP67 rating for whole panel computer without fan
- Stable working temperature, $-40\sim70^{\circ}C$



Core Competency : Premium Design

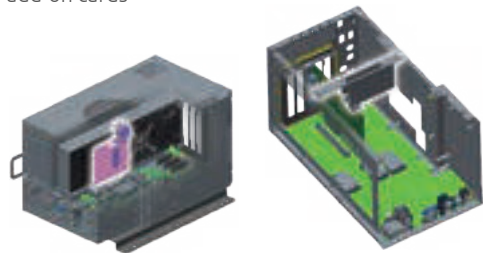
For Rugged Devices and Vehicle/Railway Computers



Sturdy System for Securing GPU Cards While Driving

Fixture Design for GPU and PCIe Cards

- Avoids vibration issues, absorbing 2.0g at 5 to 500Hz (SSD + graphics card)
- Supports a variety of graphic cards and PCIe add-on cards



Damping Bracket

- Optional damping bracket enhances anti-vibration capabilities for HDD, GPU, and PCIe cards
- Absorbs 1.6g at 5 to 500Hz (HDD + graphics card)



Diverse Camera Input Interface for Video Surveillance

PoE Port

- PoE 802.3af/at, max. 25W per port
- Choice of M12 X-coded or RJ45
- Independent 10/100/1000 Mbps
- LAN and power isolation avoids LOM damage from transient surges



FAKRA with MIPI Port

- Supports MIPI camera input with FAKRA, 1080p60 2M pixel
- SerDes V-by-One technology
- Uncompressed video data transmitted over 15m
- Transmission of up to 1.2Gbps per CSI-2 data lane
- MIPI camera with IP67



CVBS Port

- Supports mini-PCIe capture module and analog camera with H.264 compression
- HD capture solution
 - Video input for 1 × SDI, 1 × HDMI, 1 × DVI-I, 1 × YPbPr
 - Video format for 3G-SDI, HD-SDI, SD-SDI
- SD capture solution
 - Video input for CVBS
 - Video format for NTSC, PAL

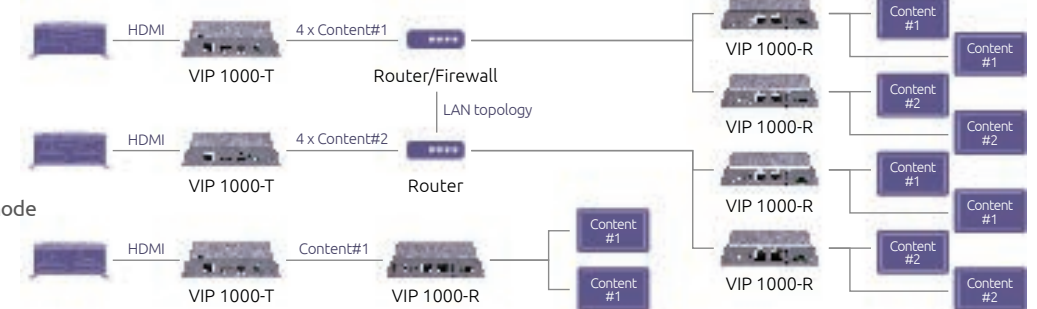


Infotainment/PIS Solutions for In-vehicle and Train

Transmit Video & Audio over Ethernet up to 100m

- Extend 2K HDMI signals over Ethernet to transmit the video streaming to far end
- Video over IP technologies support Unicast, Daisy Chain and Multicast modes
- Quick and easy deployment by existing Cat.5 Ethernet cables to reduce TCO
- Maintenance free by the hardware Encode/Decode and the plug & play mechanism
- Designed with 9~36Vdc power range, specialized for in-vehicle public transport applications, like PIS and infotainment

Multicast mode

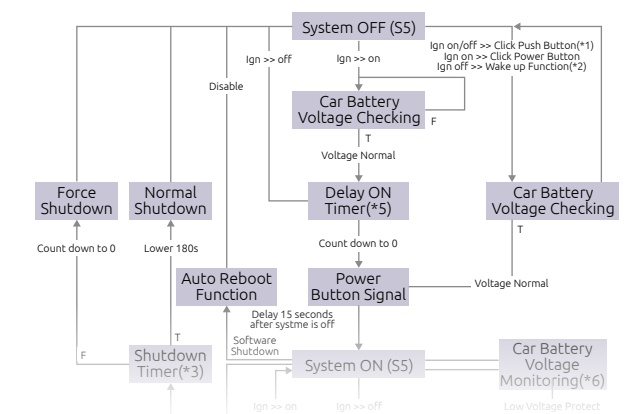


Unicast mode



In-vehicle Ignition Power Management

- IGN-OFF delay-time ON/FF setting (Pre-set)
- IGN-ON delay-time ON/FF setting (Pre-set)
- IGN-OFF delay-time dynamic setting
- IGN-OFF power-down through dynamic delay-time setting
- Reverse voltage protection and OVP/OCP
- Cranking working voltage is possible (~20seconds)
- System Wakeup through cellular modem SMS/trigger signal



Internet of Vehicles (IoV) -

Creating a Fully-encompassing Car Ecosystem Through IoV Innovation

Build Your Next-Gen Mobile Computing Solutions



Enable smart transportation and traffic infrastructure with AI inference



Connect to next-gen wireless 5G NR, Wi-Fi 6/6E, DSRC/C-V2X network technologies



Perform intelligent surveillance with event prediction and detection

First Response

AI for ANPR & Facial Recognition



AI Edge Computing

AI Vision for Inspection/People Counting



AI Edge Computing

Autonomous Driving/ADAS



Smart Public Transit

Infotainment & PIS



Smart Public Transit

Intelligent Video Surveillance



Smart Public Transit

Infotainment & PIS



Wi-Fi 6/6E

Smart Public Transit

Infotainment & PIS



Wi-Fi 6/6E

V2X

AI Edge Computing

AI Traffic Control & Magement



Wi-Fi 6/6E

Wi-Fi 6/6E

Material Handling

Positioning Management



Logistics

Fleet Management



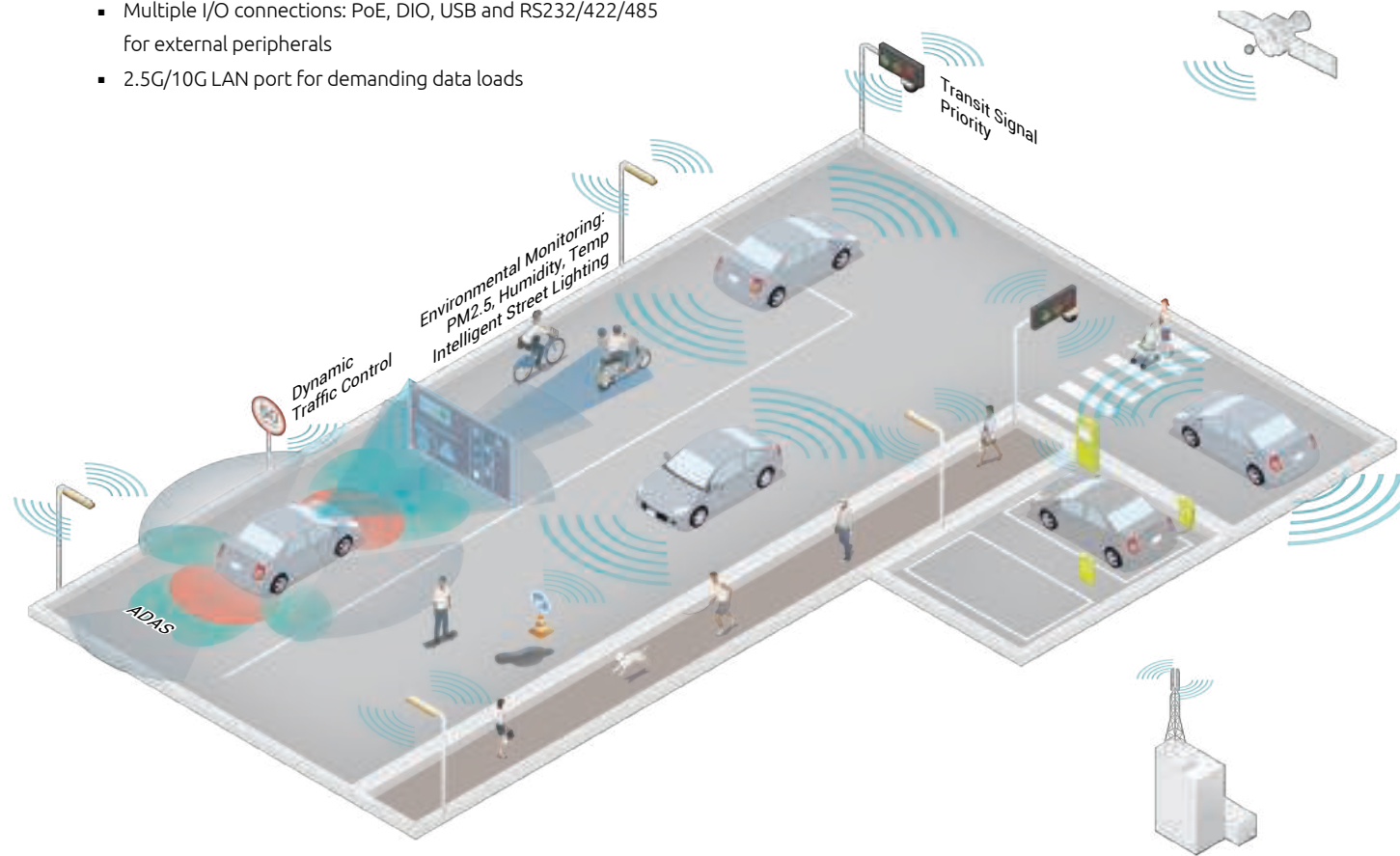
ADAS and Autonomous Driving -

Deep Learning Makes ADAS and Autonomous Driving Perceptive and Practical



NEXCOM's Solutions

- Intel® Core™ 8/9th, 12/13th Gen processor with high performance
- Wide selection of GPU engines from NVIDIA's Quadro Turing and Ampere series, Hailo Hailo-8™, and Google Coral
- GPU acceleration via MXM (Mobile PCI Express Module) and PCIe x16 cards, specially designed for mobile applications
- Multiple I/O connections: PoE, DIO, USB and RS232/422/485 for external peripherals
- 2.5G/10G LAN port for demanding data loads
- RAID 0, 1, 5 and 10 increase data security and integrity
- Global navigation satellite system (GNSS) and WWAN connections for accurate vehicular positioning



Recommended Models



ATC 3530

IP 67 Accelerated AI Edge In-Vehicle Computer with built-in NVIDIA® Jetson™ NX SoM

- Supports 4-CH MIPI SerDes (VBO)/cameras (up to 25m cable reach)/4-ch PoE
- Supports LTE/5G and Wi-Fi 6/6E



VTC 7251-7C4

Fanless In-Vehicle Computer, Intel® Core™ i7-8700T

- 1 x LAN + 4 x independent PoE supported
- 4 x mini-PCIe + 1 x M.2 Key B expansion slots



ATC 8010

AI Inference, In-Vehicle, Fanless Computer with Intel® Core™ 8th Gen. CPU

- Support NVIDIA® MXM GPU (Turing and Ampere-based Quadro)
- Up to 8 independent GbE PoE+



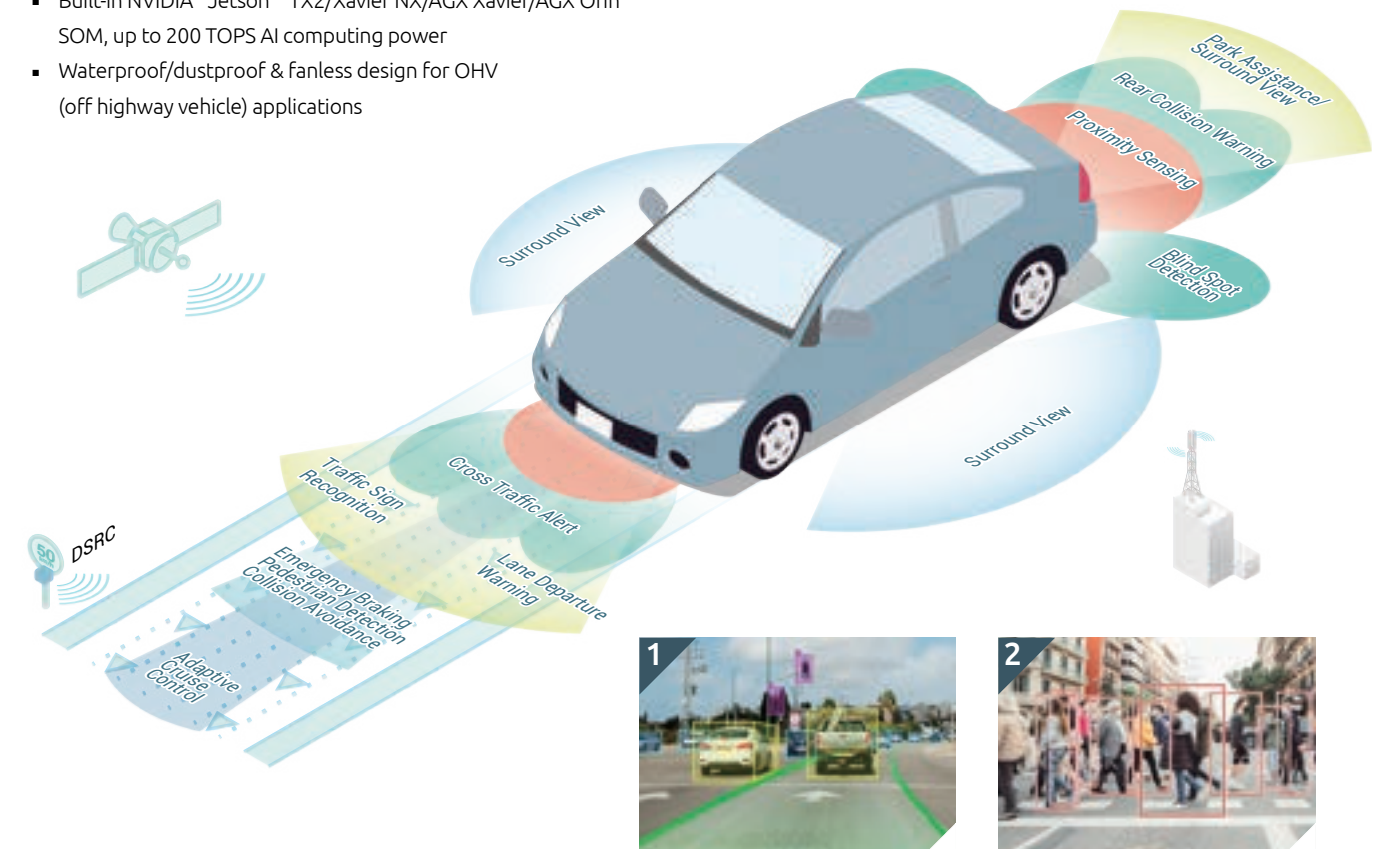
ATC 8110

AI Powered In-Vehicle Computer, Intel® Core™ 8th/9th CPU S/Refresh

- Add-on NVIDIA graphics card RTX3090 (350W) or higher
- MIL-STD-810H for anti-vibration/shock to protect graphics card

ADAS and Autonomous Driving Application Requirements

- Flexible design fulfills various AI recognition performance requirements
- Extended connectivity with different peripherals, such as MIPI/ IP/GigE cameras, light detection, ranging (LiDAR), and radar
- Low-latency signal transmission and rapid cloud computing access
- Built-in NVIDIA® Jetson™ TX2/Xavier NX/AGX Xavier/AGX Orin SOM, up to 200 TOPS AI computing power
- Waterproof/dustproof & fanless design for OHV (off highway vehicle) applications
- Rugged design with add-on, built-in GPU module or SoM to sustain vibration and shock for OHV applications
- Precise tracking/positioning through GNSS, RTK, and DR
- Pre-trained deep learning models offering for ADAS and autonomous driving



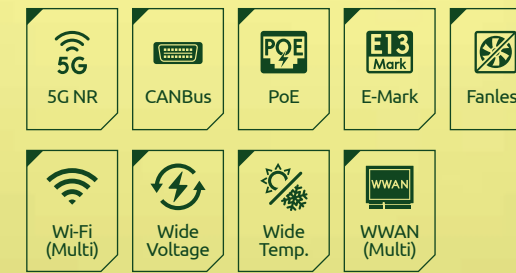
Lane detection and semantic segmentation



Automated pedestrian detection

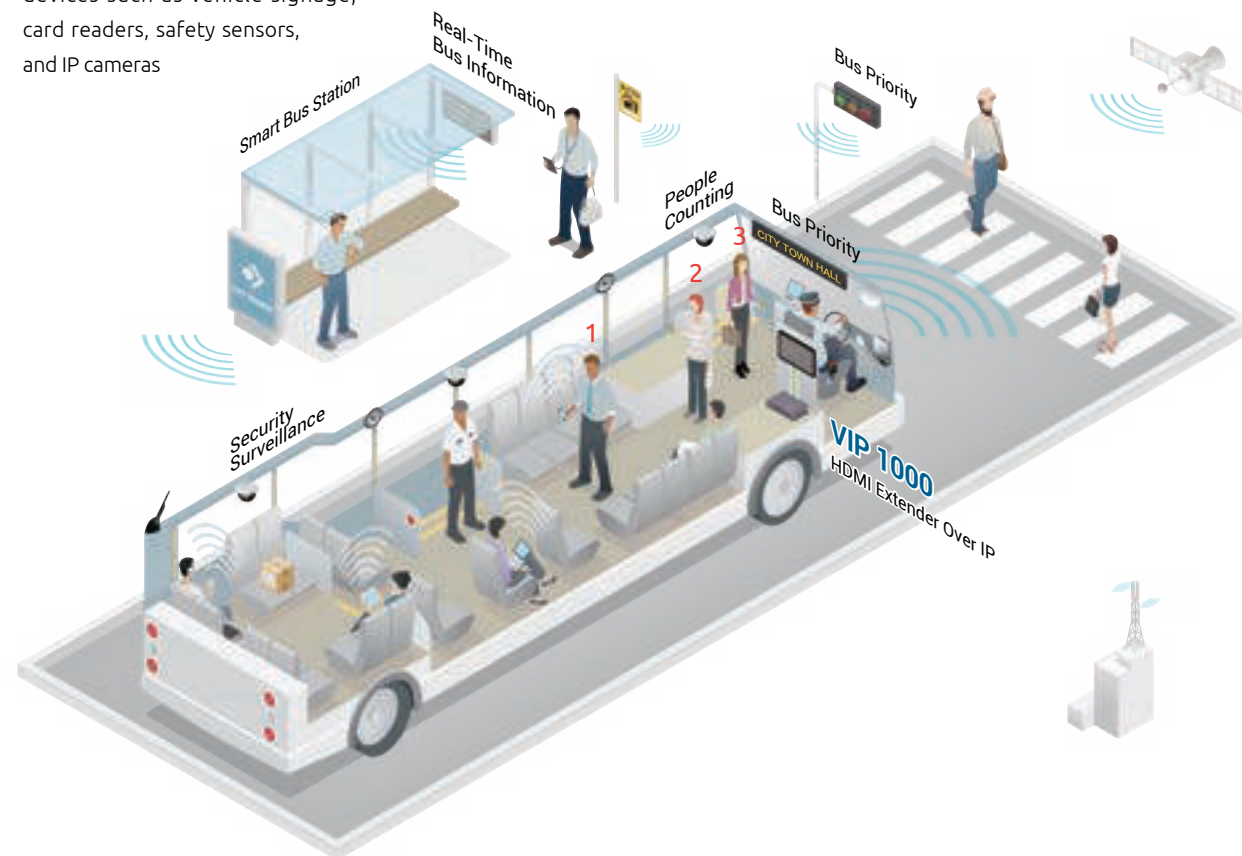
Smart Public Bus Transit -

Take a Ride to a Safe, Green, Fun, and Comfortable Tomorrow



NEXCOM's Solutions

- PC-based, in-vehicle NVRs for real-time surveillance, with live view, recording, and playback features
- Built-in global navigation satellite system (GNSS) with dead reckoning (DR) function for continuous route tracking from remote locations
- Built-in communication ports connect devices such as vehicle signage, card readers, safety sensors, and IP cameras
- Better management: adjust departure frequency, assign better bus routes, and compute revenue forecasts
- Multiple Wi-Fi and cellular modules, each with multiple SIM slots, act as mobile routers to provide uninterrupted Internet service via various ISPs
- In-vehicle HDMI extender over IP solution designed specifically for public transport PIS and infotainment, that works over standard networking

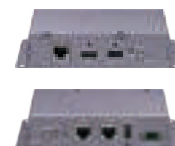


Recommended Models



VTC 1031/1031-C2

- Fanless In-Vehicle Computer, Intel Atom® Elkhart Lake x6413E
- Dual display outputs and 2.5GbE LAN port
 - 5G NR and Wi-Fi 6/6E wireless communication options



VIP 1000

- Full HD HDMI Extender Over IP
- Plug and play
 - 2 x Full HD HDMI output, up to 100 meter distance
 - Unicast, daisy chain and multicast modes support



VTC 6221

- Fanless In-Vehicle Computer, Intel Atom® Quad Core x7-E3950
- 3 x mini-PCIe + 2 x M.2 Key B expansion slots
 - 2 x LTE/5G modules supported



VTC 7260

- Fanless In-Vehicle Computer, Intel® 11th Gen Tiger Lake UP3
- 1 x LAN + 4 x independent PoE supported
 - 2 x mini-PCIe + 3 x M.2 Key B/E/M expansion slots

eBus Application Requirements

- IoT cloud services allow real-time transmission of bus information to command centers, stations, and passenger mobile applications
- Wi-Fi 6 high-speed connection improves passengers' video streaming, social media, and online shopping experiences
- PoE cameras can first capture external images, then use Google Coral module or Hailo Acceleration module to perform pedestrian detection and collision warnings
- GNSS/DR module can obtain vehicle location whenever needed to ensure vehicle is on course
- Rich I/Os connect to other devices, such as people counters, door sensors, and ticketing machines
- Multi-display (VGA, HDMI) can provide driver monitoring and passenger infotainment



Smart Public Rail Transit -

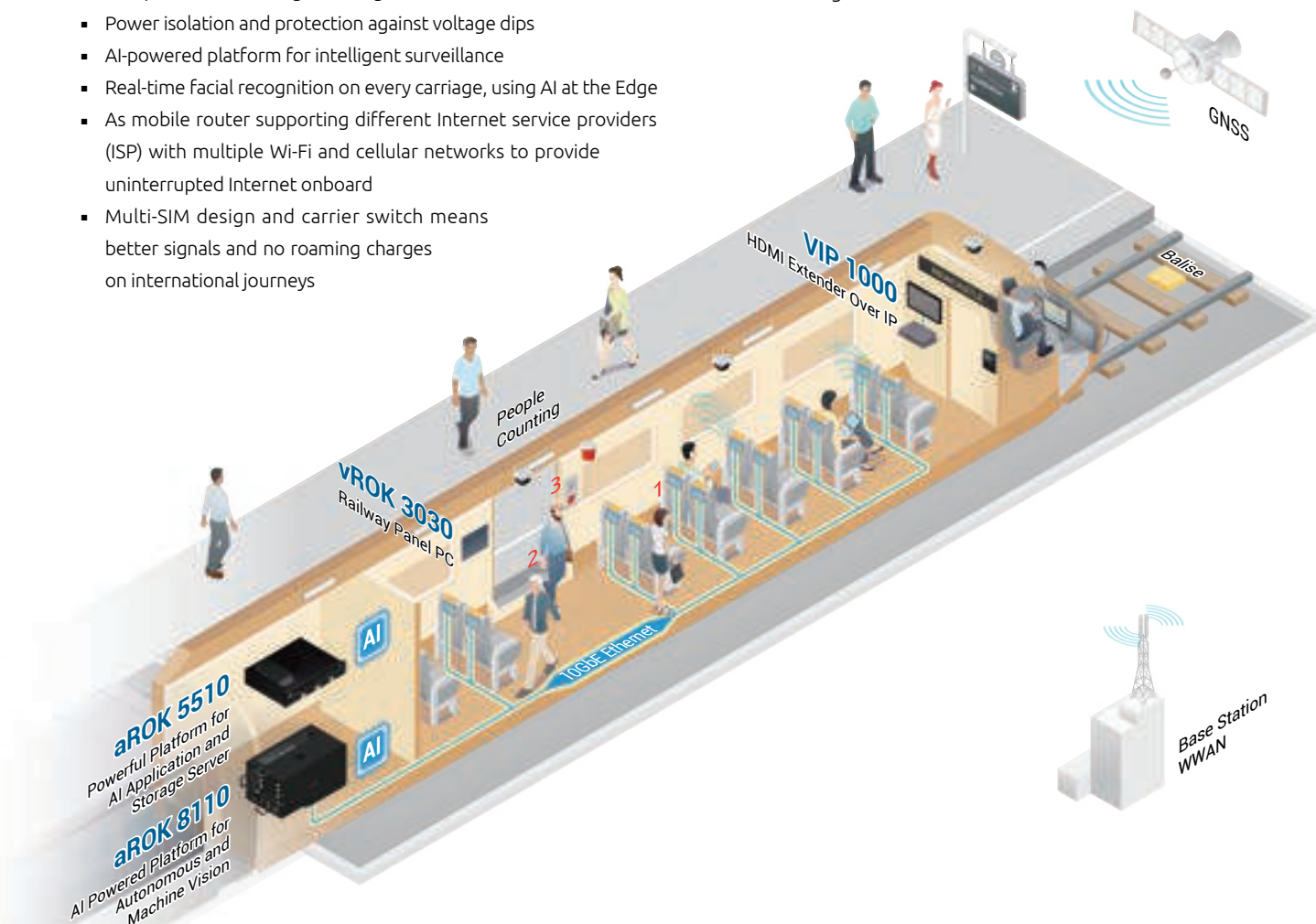
Telematics for Transportation Security and Efficiency, Plus Passenger Satisfaction



NEXCOM's Solutions

- Compliance with rolling stock regulations EN50155 and EN45545-2
- Power isolation and protection against voltage dips
- AI-powered platform for intelligent surveillance
- Real-time facial recognition on every carriage, using AI at the Edge
- As mobile router supporting different Internet service providers (ISP) with multiple Wi-Fi and cellular networks to provide uninterrupted Internet onboard
- Multi-SIM design and carrier switch means better signals and no roaming charges on international journeys

- HDMI extender over IP solution designed specifically for railway public transport PIS and infotainment, that works over standard networking



Recommended Models



nROK 1031/1031-C2

Fanless Rolling Stock Computer, Intel Atom® Elkhart Lake x6413E

- 5G NR and Wi-Fi 6E wireless communication options
- Built-in GNSS receiver with optional dead reckoning function



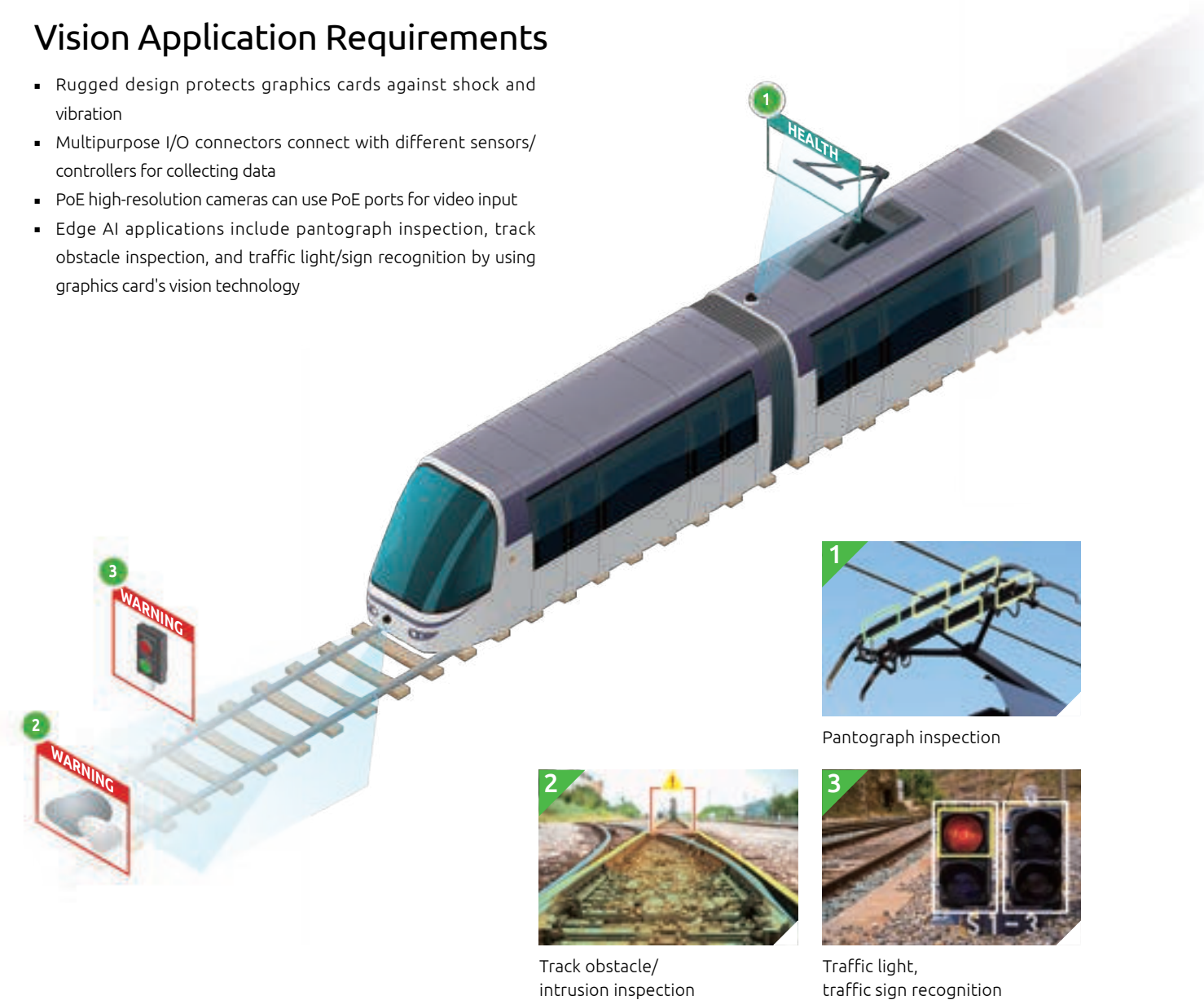
nROK 6221

Fanless Rolling Stock Computer, Intel Atom® x7-E3950

- 3 x mini-PCIe + 2 x M.2 socket expansion
- 2 x LTE/5G module supported

Vision Application Requirements

- Rugged design protects graphics cards against shock and vibration
- Multipurpose I/O connectors connect with different sensors/controllers for collecting data
- PoE high-resolution cameras can use PoE ports for video input
- Edge AI applications include pantograph inspection, track obstacle inspection, and traffic light/sign recognition by using graphics card's vision technology



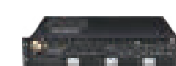
Pantograph inspection



Track obstacle/
intrusion inspection



Traffic light,
traffic sign recognition



aROK 5510

Powerful Platform for AI Applications, Storage Server, Intel® Core™/Xeon® CPU

- Graphics card support PCIe x16 and 3 x mini-PCIe + 3 x M.2 socket expansion
- 6 x external SSD and 1 x PCIe 3.0 x4 NVMe 1.3 SSD supported



aROK 8110

AI Powered for Autonomous and Machine Vision, Intel® Core™/Xeon® CPU

- 4 x PCIe 3.0 slots for discrete graphics/inference/frame grabber cards
- 4 x external storage for 2.5" SSD/M.2/U.2 NVMe SSD

Public Works -

Playing the Key Roles of Enriching the Community and Enhancing the Quality of Life



NEXCOM's Solutions

- Supports multiple telecom carriers (3G/LTE and 5G) to guarantee communication and data transmission between vehicle and control center
- GNSS tracking and WLAN/WWAN communication with multi-SIM capabilities
- Built-in communication in, such as USB, COM, GPIO, CANBus, and mini-PCIe, connect peripherals and acquire relevant data
- Extended operating temperature range: -40°C to 70°C
- Rugged design, compact size, and IP65/67 protection for reliable operation in extreme and outdoor environments
- Optional backup battery ensures consistent operation when power supply is unstable



Recommended Models



VMC 220/2020

- 8" Rugged Vehicle Mount Computer, NXP i.MX 8M Quad/Intel Atom® x7-E3950
- 1280 x 720 resolution, sunlight readable (1000 nits), PCAP touch screen
 - IP65 water-resistant and IK08 external damage protection ratings



VTC 1031/1031-C2

- Fanless In-Vehicle Computer, Intel Atom® Elkhart Lake x6413E
- Dual display outputs and 2.5GbE LAN port
 - 5G NR and Wi-Fi 6/6E wireless communication options



VTC 1911-IPK

- Fanless In-Vehicle Computer, Intel Atom® Single Core E3815
- Telematics IoT gateway with super slim and ruggedized design
 - IP67 water- and dust-resistant rating



VTC 6220-BK

- Fanless In-Vehicle Computer, Intel Atom® Quad Core x7-E3950
- 1 x M.2 Key B & 1 x mini-PCIe for WWAN module + 2 x mini-PCIe for various applications
 - Dual externally accessible 2.5" SSD trays

Garbage Truck Application Requirements

- Fuel savings and reduction of empty runs
- Connection with a variety of sensors for secure operation and control
- Robust design for outdoor and off-road environments
- Compact size to fit limited spaces in cabins
- Precise and real-time vehicle location via AVL technology
- Uninterrupted power for system stability
- Easy wiring installation and maintenance
- IP65/IP67 rating means machine reliability and resistance in harsh environments



Savings in waste disposal costs



Capacity optimization



Empty run reductions



Anti-vibration military standard, IP65/ IP67 rating, and easy maintenance

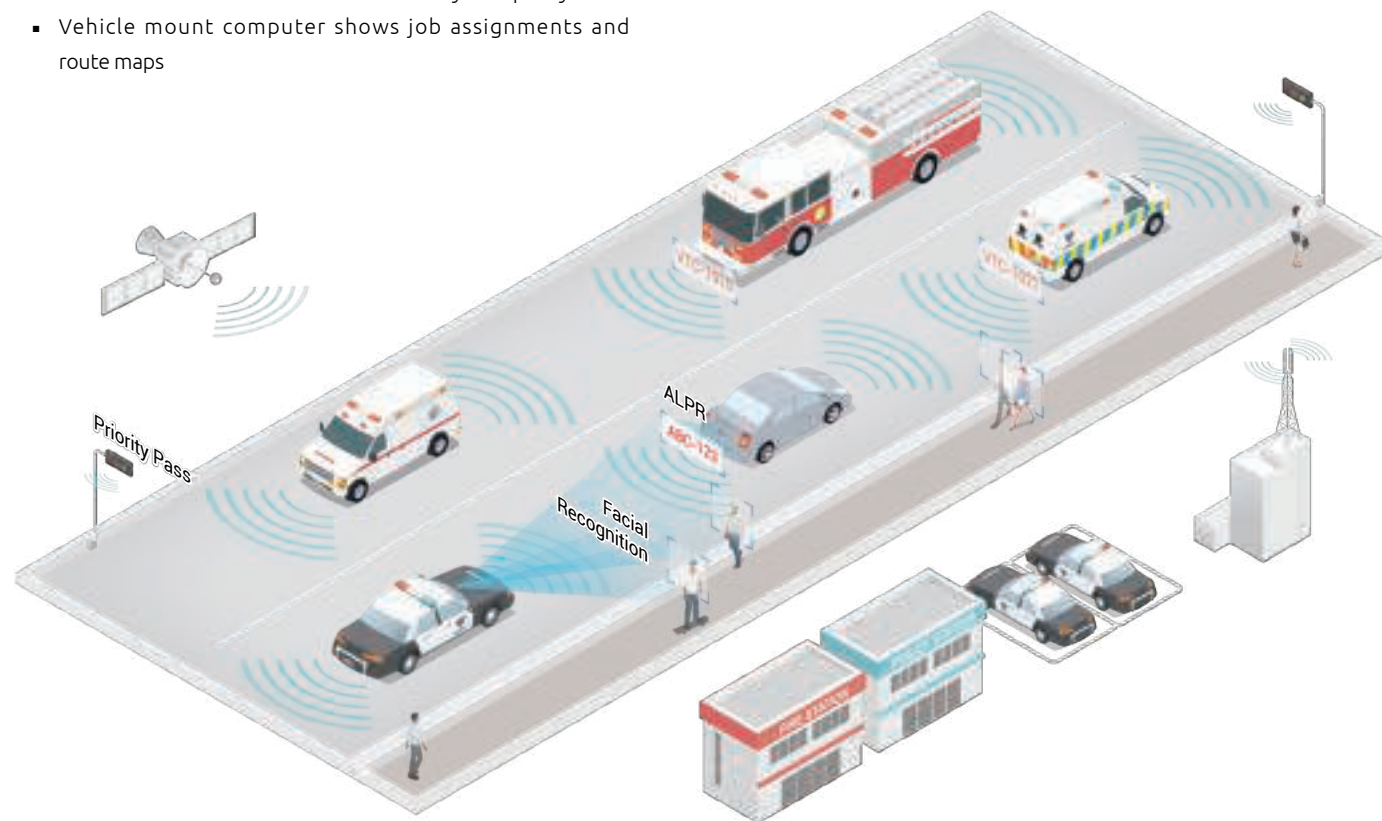
First Response Vehicles -

Trusted Crime Fighting and Emergency Services at Any Time



NEXCOM's Solutions

- 360-degree view from up to 8 IP cameras over PoE ports
- Fast automatic license plate recognition (ALPR) and face detection is powered by Intel® Core™ i 8th, 9th and 12th, 13th Gen high-performance processors and NVIDIA latest GeForce® RTX series graphics cards
- ultraONE+ technology resolves cabling issues and video signal degradation from harsh vehicular operating environments
- CANBus 2.0B reads vehicle status accurately and quickly
- Vehicle mount computer shows job assignments and route maps
- Supports multiple telecom carriers (3G/LTE and 5G) to guarantee communication and data transmission between vehicle and control center
- Backup battery ensures uninterrupted system operation
- Supports IEEE 802.3 af/at PoE for IP cameras and other PD devices



Recommended Models



VTC 6222-C4S

In-Vehicle Computer, Intel Atom® Quad Core E3950

- 1 x LAN + 4 x PoE supported
- 1 x RS232 (Full), 1 x RS232 (Tx/Rx), 1 x RS422/485



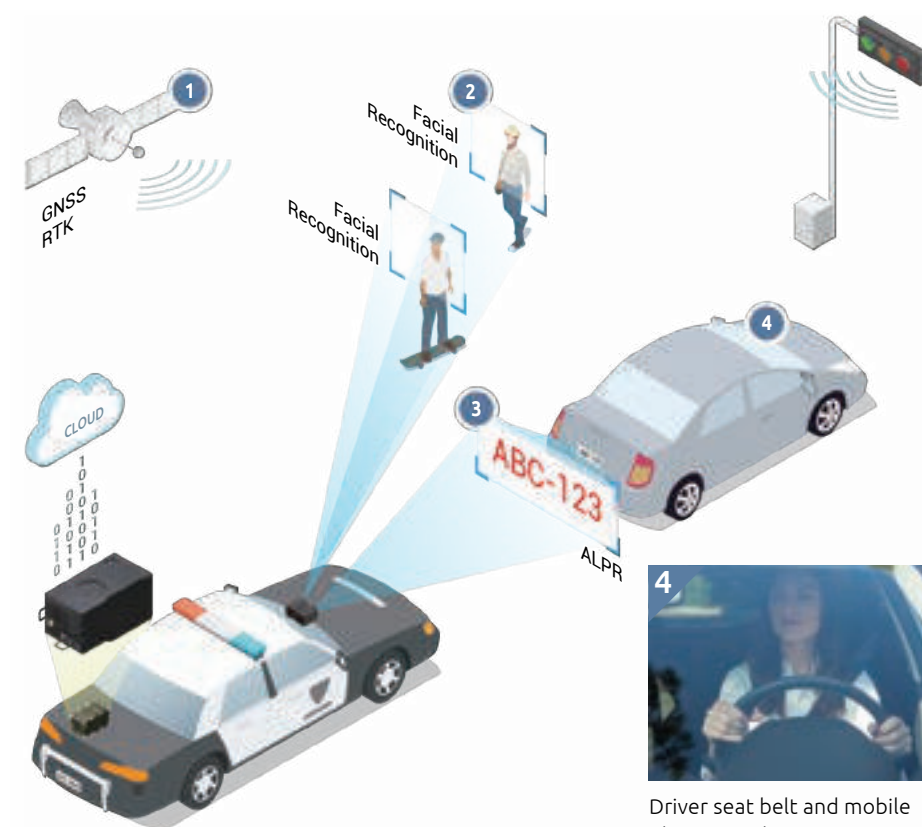
VTC 7251-7C4

Fanless In-Vehicle Computer, Intel® Core™ i7-8700T

- 1 x LAN + 4 x independent PoE supported, total 60W
- 4 x mini-PCIe slots + 1 x M.2 Key B expansion

Smart AI Patrol Application Requirements

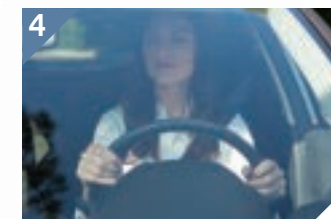
- Ability to aggregate video feeds from multiple IP cameras
- High AI performance for sophisticated image processing (facial recognition, ANPR)
- Real-time surveillance on multiple video displays
- Easy system installation to fit limited spaces in vehicles
- Real-time vehicle status monitoring
- Rapid emergency dispatches with most optimal route
- Quick and trusted communication with emergency and control center
- Uninterrupted power supply to systems
- Display and system integration with simplified cabling for large trucks
- All-in-one PoE design lowers total cost of ownership (TCO) and facilitates maintenance
- High-speed storage available for performance multi-cam needs



1
Rapid emergency dispatch and real-time monitoring



2
Facial recognition technology helps identify suspects



4
Driver seat belt and mobile phone use detections



3
Support for speed violation detection and ANPR technologies



ATC 8010

AI Inference, In-Vehicle, Fanless Computer with Intel® Core™ 8th Gen. CPU

- Support NVIDIA® MXM GPU (Turing and Ampere-based Quadro)
- Up to 8 independent GbE PoE+



ATC 8110

AI Powered In-Vehicle Computer, Intel® Core™ 8th/9th CPU S/Refresh

- Add-on NVIDIA graphics card RTX3090 (350W) or higher
- MIL-STD-810H for anti-vibration/shock to protect graphics card

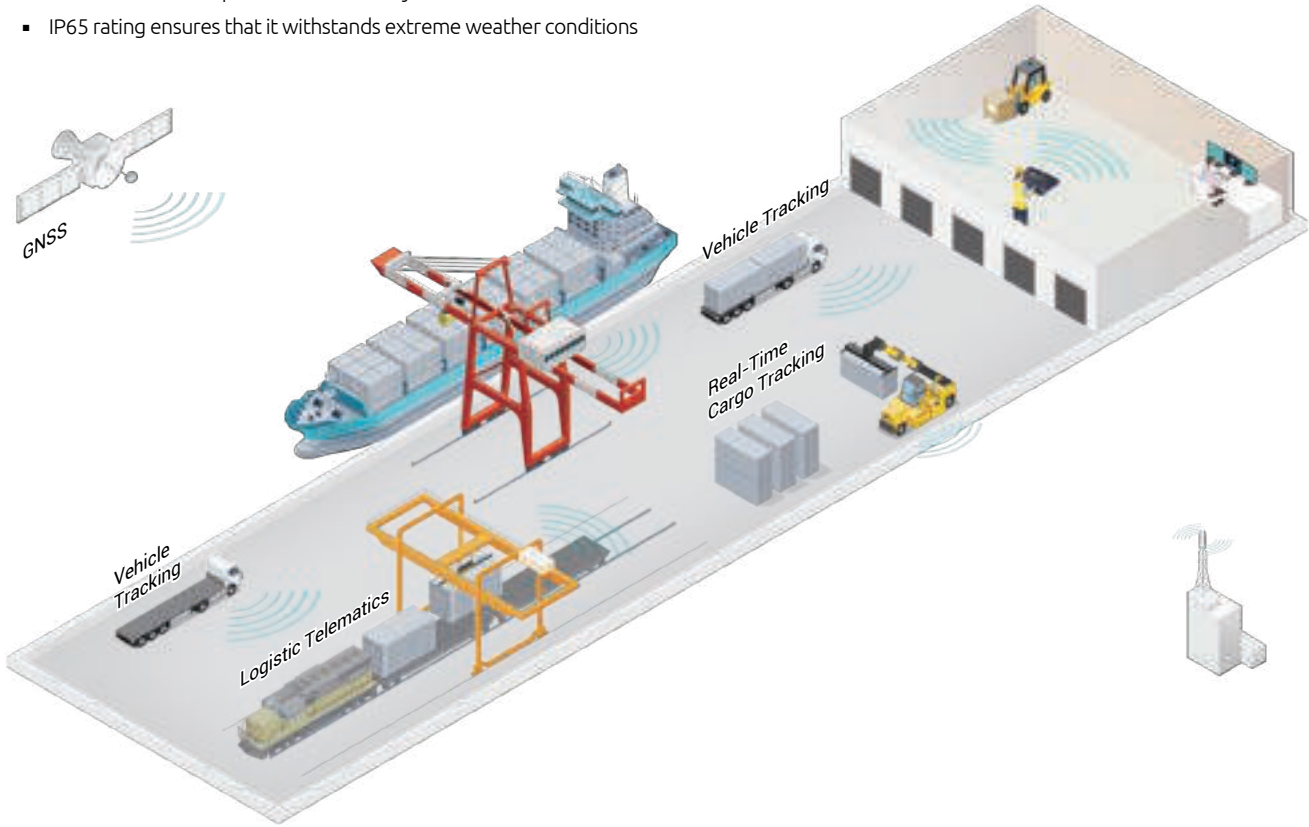
Port Management & Warehouse -

Around-The-Clock, Reliable Delivery:
Your Trust is Our Commitment



NEXCOM's Solutions

- High-brightness LCD touchscreen panel for sunlight readability
- Global navigation satellite system for precise and real-time vehicle location
- Vehicle status updates via the CANBus 2.0B, OBD II, and SAE J1708/J1939 interface
- Aluminum die casting housing protects against any large fluctuations in temperature or humidity
- IP65 rating ensures that it withstands extreme weather conditions
- Wide-range power input (9V~60V) fits different vehicles' UPS batteries
- Built-in backup battery ensures protection of mission critical to operations
- Built-in expansion sockets modules connect analog cameras, WLAN, and other peripherals



Recommended Models



- VMC 1100**
- 7" All-In-One Vehicle Computer, Intel Atom® E3825
- 800 x 480 resolution, 4-wire resistive, anti-glare touch screen
 - Front panel IP54 and F1~F5 function keys



- VMC 220/2020**
- 8" Rugged Vehicle Mount Computer, NXP i.MX 8M Quad/Intel Atom® x7-E3950
- 1280 x 720 resolution, sunlight readable (1000 nits), PCAP touch screen
 - IP65 water-resistant and IK08 external damage protection ratings



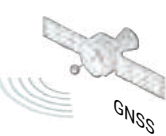
- VMC 3020**
- 10.4" Rugged Vehicle Mount Computer, Intel Atom® x5-E3930
- 1024 x 768 resolution, sunlight readable (1200 nits), 5-wire resistive touch screen
 - Front panel IP65 water-resistant
 - 9V~60V DC power in



- VMC 4020**
- 12.1" Rugged Vehicle Mount Computer, Intel Atom® x7-E3950
- 1024 x 768 resolution, sunlight readable (1200 nits), 5-wire resistive touch screen
 - IP65 water-resistant rating (VMC 4020-4A1)
 - 9V~60V DC power in

Forklift Application Requirements

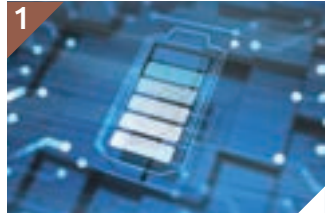
- IP65 rating ensures lower risk of water/dust damaging interior electronic parts
- Sunlight readability (high brightness over 1000 nits) enhances display visibility
- IK08/IK09 vandal-proof rating: reduces injuries and RMA costs, while prolonging lifetime
- Backup battery for approx. 15 min. of operation when forklift battery needs to be replaced



Functionality despite rain or humidity



External damage protection



Uninterruptible power supply



Sunlight readability

Fleet Management -

Improving Driver Safety, Saving Energy, and Increasing Overall Fleet Efficiency



NEXCOM's Solutions

- Powered by Intel® processors to quickly handle strenuous tasks
- Supports various displays: VGA, HDMI, ultraONE+
- Supports GNSS and WLAN/WWAN modules for tracking and communication
- Built-in communication ports, such as USB, COM, GPIO, and CANBus, connect peripherals and acquire vehicle data
- Rugged design and IP65/IP67 protection for reliable operations in extreme and outdoor environments
- Alternative power source with optional backup battery ensures uninterrupted data storage and transmission, regardless of vehicular power instability
- Powerful CVBS support for blind spot monitoring and collision avoidance
- SIM card switching for better signals and no roaming charges on international journeys



Recommended Models



VMC 220/2020

- 8" Rugged Vehicle Mount Computer, NXP i.MX 8M Quad/Intel Atom® x7-E3950
- 1280 x 720 resolution, sunlight readable (1000 nits), PCAP touch screen
 - IP65 water-resistant and IK08 external damage protection ratings



VTC 1910

- Fanless In-Vehicle Computer, Intel Atom® Single Core E3815
- Telematics IoT gateway, super slim and ruggedized design
 - Dual SIM cards for WWAN modules



VTC 1030

- Fanless In-Vehicle Computer, Intel Atom® Elkhart Lake x6211E
- Compact and fanless design
 - 5G NR and Wi-Fi 6/6E wireless communication options

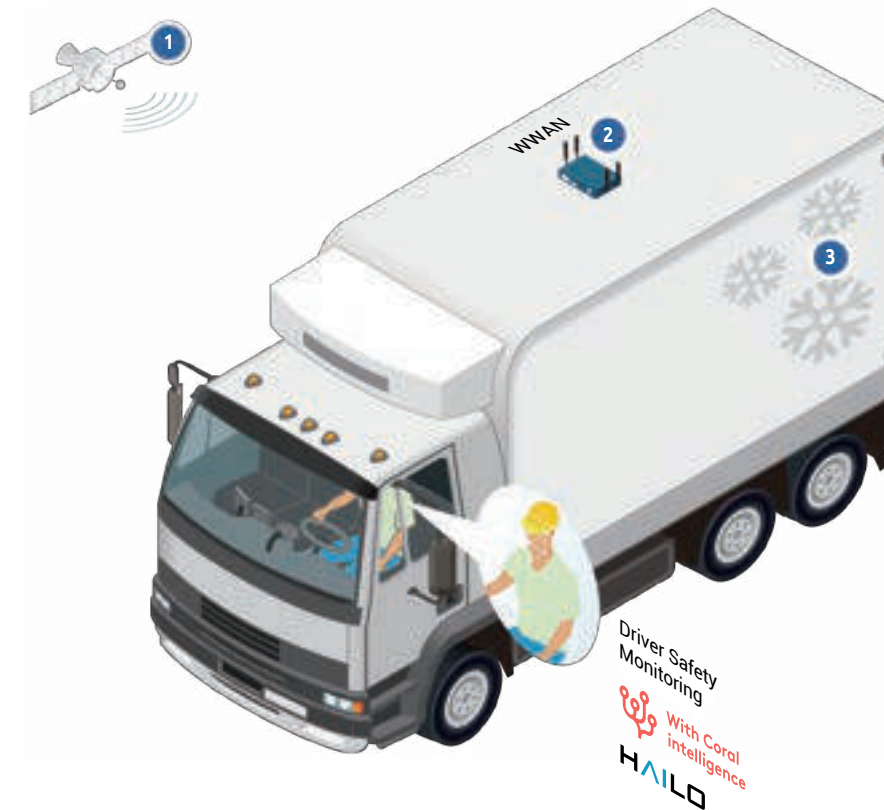


VTC 1031/1031-C2

- Fanless In-Vehicle Computer, Intel Atom® Elkhart Lake x6413E
- Dual display outputs and 2.5GbE LAN port
 - 5G NR and Wi-Fi 6/6E wireless communication options

Cold Chain Logistics Application Requirements

- Real time 5G telematics easily connects all vehicles and command center
- GNSS/DR module can obtain vehicle location whenever needed to ensure that the vehicle is on course, as well as for more efficient scheduling
- CANBus function obtains car information such as vehicle speeds and fuel volume for better eco-driving
- PoE cameras can first capture images, then use Google Coral module or Hailo Acceleration module to perform ADAS driver safety monitoring
- Continuous monitoring of temperature and humidity sensors, accompanied by data uploads to the cloud



GNSS/DR guides route tracking



5G telematics for fleet communication



Cold chain monitoring

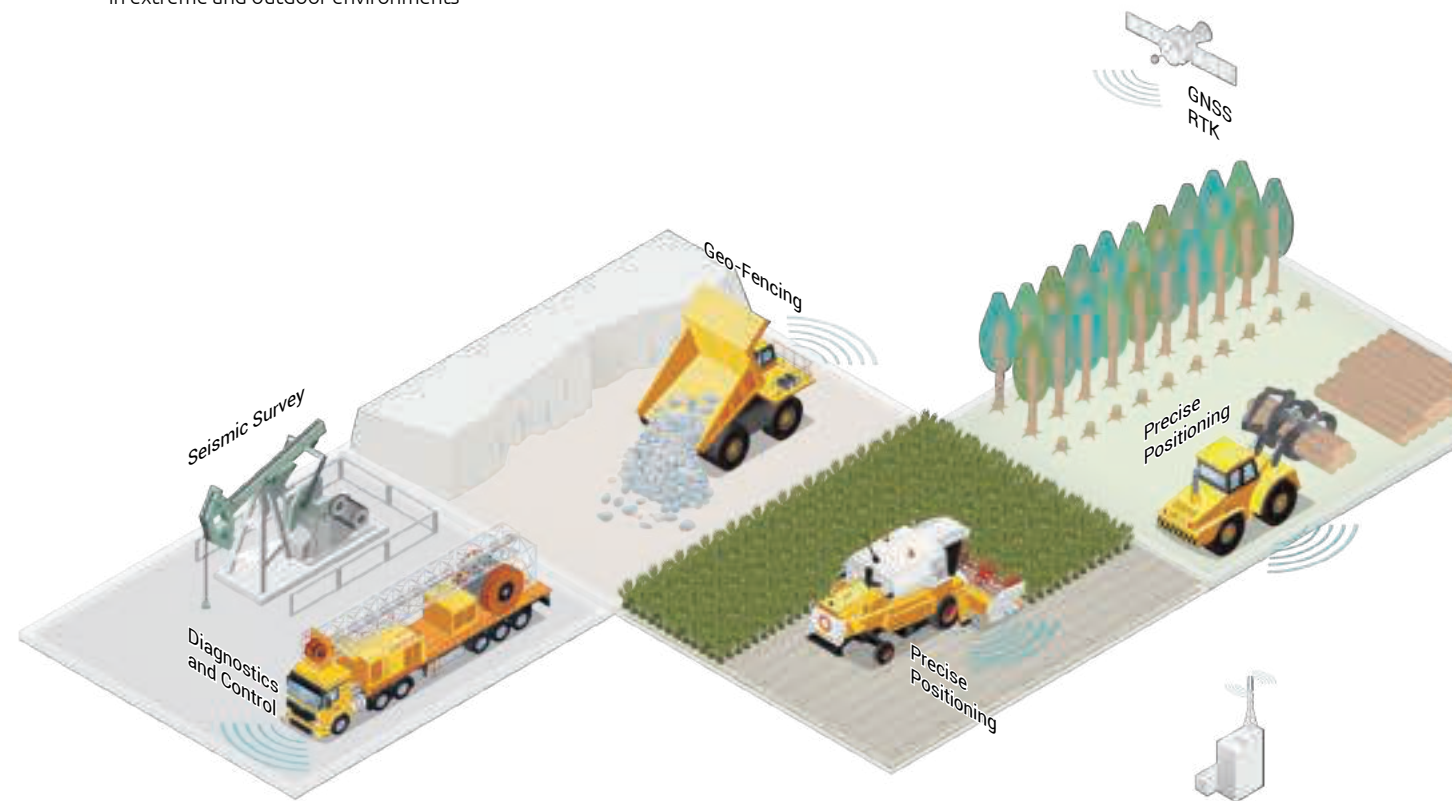
Raw Material Management -

Born Tough to Increase Efficiency and Productivity



NEXCOM's Solutions

- Powered by Intel® processors to quickly handle strenuous tasks
- High-brightness LCD touchscreen panel, with reduced reflection
- Global navigation satellite system (GPS/Glonass/Galileo/BeiDou) with RTK and DR for accurate vehicle positioning
- Rugged design and IP65/IP67 protection for reliable operation in extreme and outdoor environments
- Built-in communication ports, such as USB, COM, GPIO, and CANBus, connect peripherals and acquire vehicle data
- Edge AI applications, including object and driver behavior detection, prevent accidents



Recommended Models



VMC 220/2020

- 8" Rugged Vehicle Mount Computer, NXP i.MX 8M Quad/Intel Atom® x7-E3950
- 1280 x 720 resolution, sunlight readable (1000 nits), PCAP touch screen
 - IP65 water-resistant and IK08 external damage protection ratings



ATC 3530

- IP 67 Accelerated AI Edge In-Vehicle Computer with built-in NVIDIA® Jetson™ NX SoM
- Supports 4-CH MIPI SerDes (VBO)/cameras (up to 25m cable reach)/4-ch PoE
 - Supports LTE/5G and Wi-Fi 6/6E



VTC 1031/1031-C2

- Fanless In-Vehicle Computer, Intel Atom® Elkhart Lake x6413E
- Dual display outputs and 2.5GbE LAN port
 - 5G NR and Wi-Fi 6/6E wireless communication options



VTC 7252-7C4IP

- Fanless In-Vehicle Computer, Intel® Core™ i7-9700TE
- 2 x LAN + 4 x independent PoE supported
 - IP65 water and dust-resistant rating

Mining Application Requirements

- Rugged IP65/IP67 design prevents dust and water ingress
- PoE cameras can first capture external images, then use Google Coral module or Hailo Acceleration module to perform AI applications, such as intrusion detection to avoid car collisions and face detection to identify driver fatigue
- GNSS RTK/DR module can obtain vehicle location whenever needed to ensure vehicle is on course, as well as to reduce risk of theft
- DSRC/C-V2X module can communicate with nearby construction vehicles and signs at any time to achieve path prediction and consequently avoid the possibility of collisions
- RFID detection can protect heavy trucks from being driven arbitrarily



1 IP65/IP67 protection against rain and dust



2 Special system design for DSRC/C-V2X communication



3 High-nits panel for sunlight readability



4 PoE cameras with Google Coral module or Hailo acceleration module AI improve safety

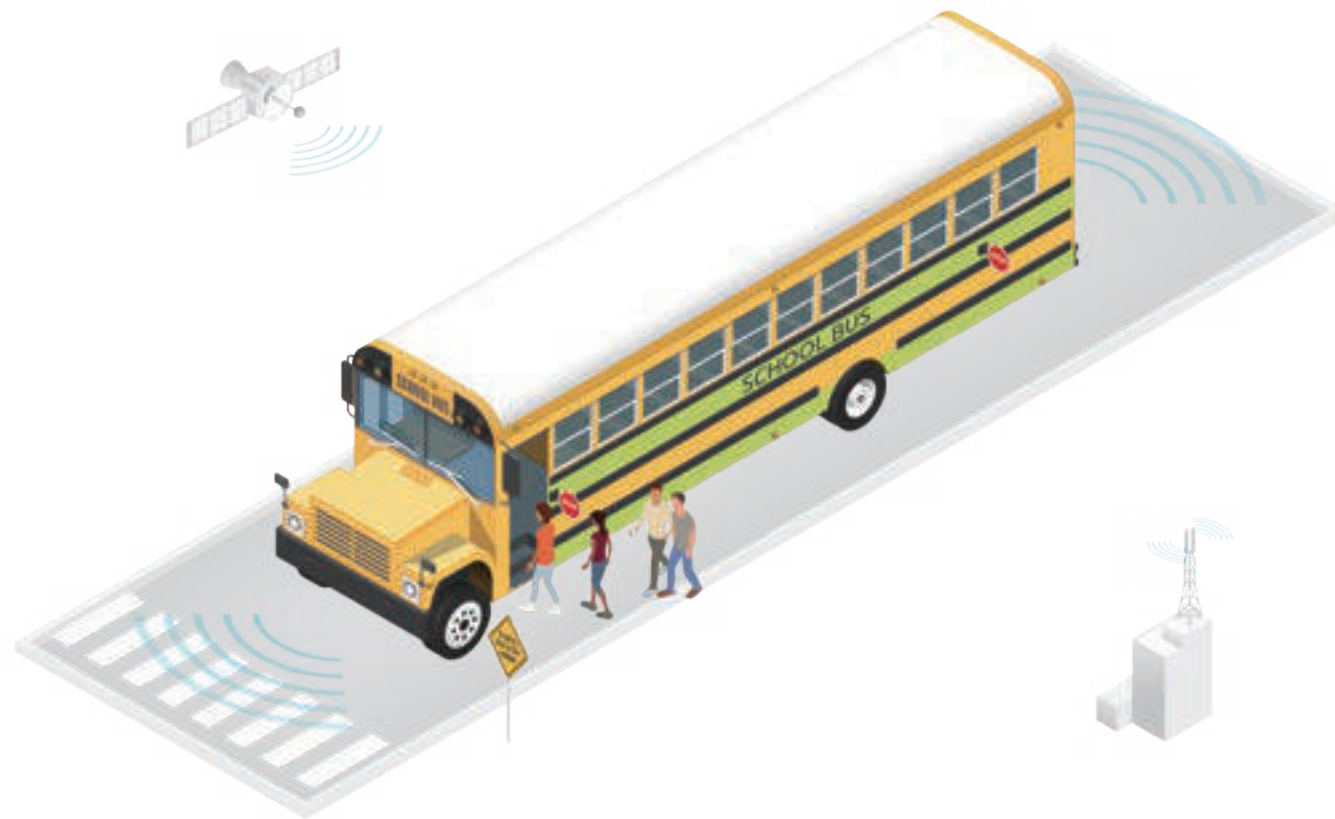
Video Surveillance -

Enhance Mobile Security: Watch, Analyze, and React in Real Time



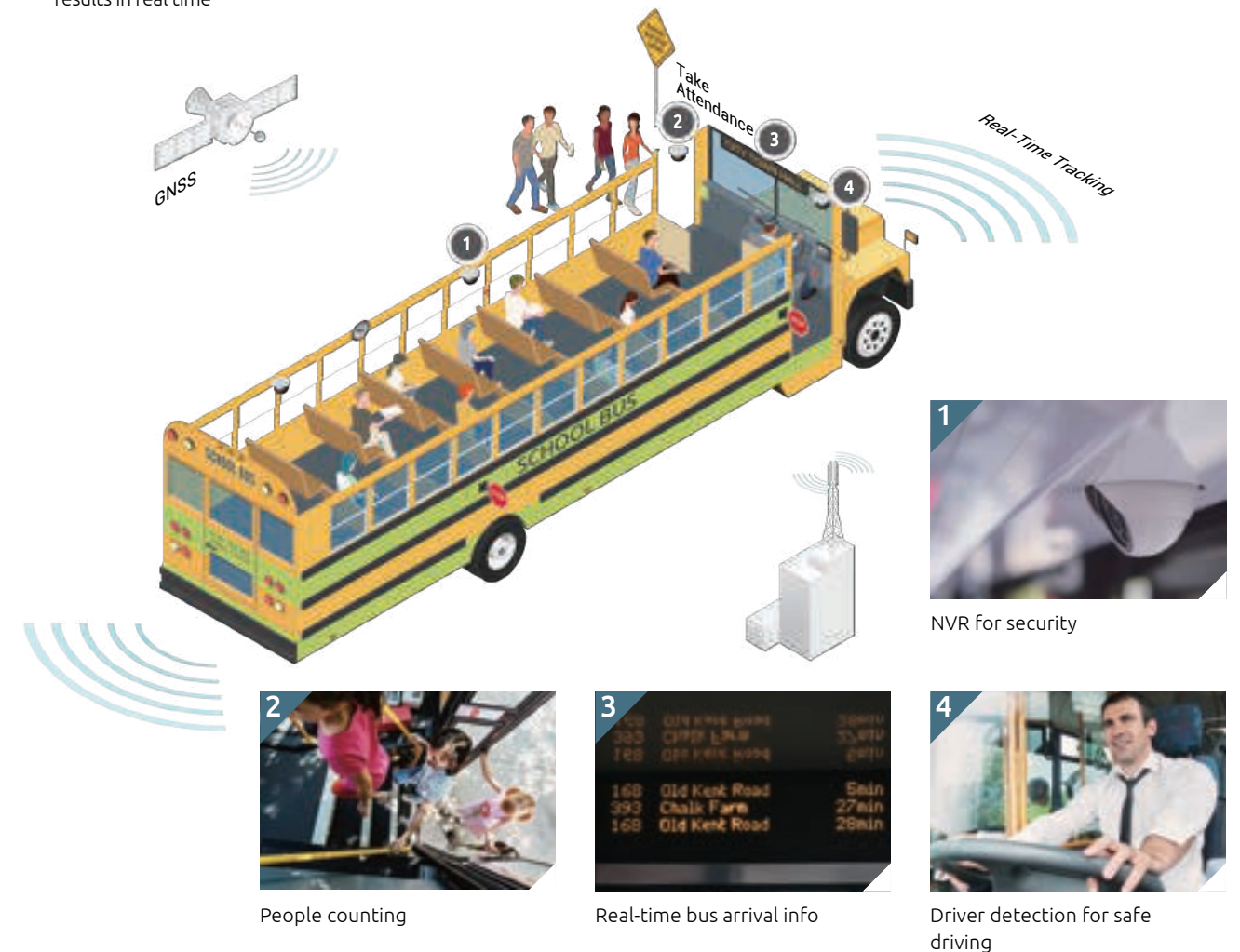
NEXCOM's Solutions

- Connections to high-resolution IP cameras with PoE to capture clear images
- In-vehicle computer with AI acceleration to analyze multiple video sources
- Industrial-grade vehicle displays for seamless video output
- Supports multiple WWAN networks with multiple SIMs, for reliable video transmission and remote monitoring
- Built-in communication ports, such as USB, COM, GPIO, and CANBus, connect peripherals and acquire vehicle data



Smart Bus Application Requirements

- Clear video images, detailed PIS information, and solid quality
- Extended compute-intensive analysis capabilities
- Rugged vehicle display shows captured images and video analytics results in real time
- Wireless communication with high bandwidth for video transmission
- Rugged and ample storage capacity



Recommended Models



VTC 6222-C4S

Fanless In-Vehicle Computer, Intel Atom® Quad Core x7-E3950

- 1 x LAN + 4 x PoE supported
- 2 x external 2.5" SATA 3.0 SSD, 1 x external SD



VTC 7250-7C8

Fanless In-Vehicle Computer, Intel® Core™ i7-8700T

- 1 x LAN + 8 x independent PoE supported
- 2 x external 2.5" SATA 3.0 SSD supported



nROK 6222-AC4S

Fanless 4-CH PoE Rolling Stock Computer, Intel Atom® x7-E3950

- 4 x M12 X-coded PoE (802.3af/at, max. 60W) + 3 x mini-PCIe expansion sockets
- Dual external storage (compatible with 15mm disk)



nROK 7251-7C4

Fanless 4-CH PoE Rolling Stock Computer, Intel® Core™ i7-9700TE

- 1 x LAN + 4 x independent PoE supported
- 3 x mini-PCIe and 2 x M.2 Key B slots

2022 New Products



VTC1030/nROK1030

Fanless In-vehicle/Rolling Stock Computer

- Intel Atom® Elkhart Lake x6211E (Dual Core) processor, 6W
- Compact and fanless design
- 5G NR and Wi-Fi 6/6E wireless communication options
- Built-in GNSS receiver with optional dead reckoning function
- Dual display outputs and 2.5GbE LAN ports



VTC 1031/1031-C2

Fanless In-vehicle Telematics Computer

- Intel Atom® Elkhart Lake x6413E (Quad Core) processor, 9W
- Dual display outputs and 2.5GbE LAN ports
- 5G NR and Wi-Fi 6/6E wireless communication options
- 2 x PoE support, total 60W (VTC 1031-C2)
- Optional equipped AI accelerator M.2/mini-PCIe module



VTC 210

Compact and Fanless In-vehicle Computer for Digital Signage and Gateway Applications

- Rockchip RK3328, Quad-core ARM® Cortex®-A53 CPU
- Integrated 2-port LAN 10/100/1000 Mbps switch
- Support LTE and Wi-Fi functions
- Wide-range 9-36VDC input voltage with E mark



VTC 7260/7260-C4

Fanless In-Vehicle Telematics Computer

- Intel® 11th Gen, Tiger Lake UP3
- 2 x 1000 Mbps, 2 x 2500 Mbps PoE port (VTC 7260-C4)
- Up to 3 of LTE/5G/Wi-Fi 5/6
- Operating temperature of -40°C~70°C
- CE/FCC, UKCA, E mark certified



VES31-4S/8S & VES31-4SR/8SR

Unmanaged Gigabit Ethernet Switch with 4-port/8-port PoE

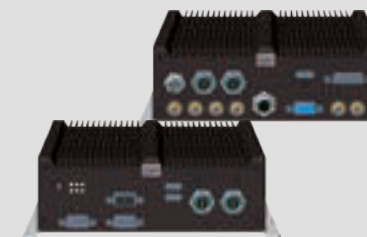
- 4/8 x 10/100/1000 Mbps PoE port (802.3af/at compliance)
- Smart power management with ignition control and power on/off delay
- Wide power input range 9 ~ 36VDC
- -40 ~ 70°C operating temperature
- E mark and EN50155 for in-vehicle and railway applications



ATC 3530

IP67 Accelerated EdgeAI In-vehicle Computer

- Built-in NVIDIA® Jetson Xavier™ NX SOM, 21 TOPS
- Optional for 4-port GbE PoE or 4-ch MIPI VBO SerDes
- HEVC/H.265 hardware CODEC, 32 x 1080p30 compute power
- Ultra-speed PCIe 3.0 x4 NVMe SSD, LTE/5G modem & Wi-Fi 5/6 expansion
- Operating temperature of -30~70°C



nROK 1031/1031-C2

Fanless Rolling Stock Telematics Computer

- Intel Atom® Elkhart Lake x6413E (Quad Core) processor, 9W
- 5G NR and Wi-Fi 6/6E wireless communication options
- Dual display outputs and 2.5GbE LAN M12 X-coded port
- 2 x PoE support, total 60W (nROK 1031-C2)
- Optional equipped AI accelerator M.2/mini-PCIe module



VIP 1000

Full HD HDMI Extender Over IP

- Plug and play
- 2 x Full HD HDMI output, up to 100 meter distance
- Unicast, daisy chain and multicast modes support
- Wide-range 9-36VDC input voltage with ignition control
- E mark for in-vehicle application



vROK 3030

10.4" Railway Open Frame Panel Computer

- Intel Atom® Elkhart Lake x6414RE (Quad Core) processor, 9W
- 10.4" TFT LCD monitor with projected capacitive touch screen (BOM optional)
- IPS LCD with wide viewing angle and resolution 1024 x 768
- Sunlight readable capability: 1,200nits LCD brightness



VMC 220-PC1

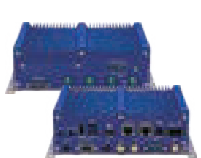
IP65 Rugged Vehicle Mount Computer

- NXP i.MX 8M Quad processor with 1.3 GHz frequency
- 8" HD IPS TFT LCD with projected capacitive touch
- Brightness: 1000 cd/m² (typical). Contrast ratio: 1000:1 (typical)
- IP65-rated and IK08-rated rugged design
- Back-up battery & RFID module (optional)

Industrial AI Edge Telematics Computer

					
Model	ATC 8010-7	ATC 8110	ATC 8110-F	aROK 5510	aROK 8110
CPU	Intel® Core™ i7-8700T, 6 Core, 2.4GHz	Intel® Coffee Lake S/ Refresh Core™/Xeon®		Intel® Coffee Lake S/ Refresh Core™/Xeon®	Intel® Coffee Lake S/ Refresh Core™/Xeon®
Chipset	Intel® Q370	Intel® C246		Intel® C246	Intel® C246
Fan/Fanless	Fanless	Fan (fan-kit pre-installed)		Fan (fan-kit pre-installed)	Fan (fan-kit pre-installed)
Memory	2 x DDR4 2400 SO-DIMM, 4GB + 4GB (default) up to 32GB + 32GB	2 x DDR4 2400/2666 SO-DIMM, up to 32GB + 32GB		4 x DDR4 2666 SO-DIMM, up to 32GB + 32GB + 32GB + 32GB	2 x DDR4 2666 SO-DIMM, up to 32GB + 32GB
Storage	2 x 2.5" SATA 3.0 SSD (removable, 15mm)	3 x 2.5" SATA 3.0 SSD/HDD (removable, 15mm) or 2 x 2.5" SATA 3.0 SSD/HDD + 1 x 2.5" U.2/NVMe M.2 2280		6 x 2.5" SATA SSD (removable, 9.5mmn)	4 x 2.5" SATA 3.0 SSD/HDD (15mm height), or 3 x 2.5" SATA 3.0 SSD/HDD + 2 x M.2 2280/2242/2260 Key M NVMe SSD (PCIe 3.0 x2), or 3 x 2.5" SATA 3.0 SSD/HDD + 1 x U.2 NVMe SSD (PCIe 3.0 x2)
Second Storage	2 x mSATA (occupied mini-PCIe socket)	1 x CFast (external accessible)		1 x mSATA, 1 x M.2 2280/2242/2260 Key M NVMe SSD (PCIe 3.0 x4), 1 x Removable SD 3.0	1 x CFast (external accessible)
GPU/VPU/TPU Coprocessor	NVIDIA Quadro MXM module	One 3-slot width PCIe 3.0 x16 lane for optional NVIDIA Graphics card		One PCIe 3.0 x16 lane for optional NVIDIA Graphics card (100W)	One PCIe 3.0 x16 lane for optional NVIDIA Graphics card
Video Out	1 x VGA, *5 x HDMI, 1 x ultraONE+	1 x VGA, 1 x HDMI		1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI
Audio	1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out	2 x Mic-in, 2 x Line-out	1 x Mic-in, 2 x Line-out	1 x Mic-in, 1 x Line-out
Ethernet	1 x Intel® 10/100/1000	2 x Intel® 10/100/1000		2 x Intel® 10/100/1000 (M12), 2 x 10GbE SFP+ card (optional)	2 x Intel® 10/100/1000 (M12)
PoE	8 x Independent Intel® 10/100/1000 (w/ 802.3at/af). Total 60W	N/A		4 x M12 GbE independent (802.3at/af). Total 60W (optional)	Up to 3 x GEM640 card (optional), each card with 4 x M12 Intel® GbE (w/ 802.3at/af). Total 60W+60W+60W
USB	6 x USB 3.2 (Gen2)	5 x USB 3.2 (Gen2), 1 x USB2.0		1 x M12 with 2 x USB 2.0 signal, 3 x USB 3.2 (Gen2), 1 x USB 3.2 (Gen1)	1 x M12 with 2 x USB 2.0 signal, 3 x USB 3.2 (Gen2), 1 x USB 2.0
COM	2 x RS232 (Full), 1 x RS232 (Full)/422/485	4 x RS232 (Full)/422/485		2 x RS-232 (Full), RS232 (Full)/422/485. (w/ isolation)	4 x RS232 (Full)/422/485. (w/ isolation)
DIO	4 x DI, 4 x DO	4 x DI (w/ isolation) 4 x DO (w/ isolation)		4 x DI, 4 x DO (w/ isolation)	4 x DI, 4 x DO (w/ isolation)
CAN		1 x CANBus 2.0B (w/ isolation)		1 x CANBus 2.0B (w/ isolation)	
DC Output	12V (2A)	12V (2A)		N/A	N/A
SIM Socket	3 (eSIM BOM optional)	4 (eSIM BOM optional)		8 (BOM option up to 10, eSIM BOM optional)	4 (eSIM BOM optional)
WWAN	2	2		4 (BOM option up to 5)	2
mini-PCIe Socket	1 x (USB 2.0) for LTE 1 x (USB 2.0, PCIe3.0/ SATA 3.0) 1 x (USB 2.0, PCIe 3.0/ SATA 3.0)	1 x (USB 2.0) for LTE 1 x (USB 2.0, PCIe 2.0)		1 x (USB 2.0, PCIe 3.0) 1 x (USB 2.0, PCIe 3.0). BOM option to 1 x mini-PCIe (USB 2.0) for LTE 1 x (USB 2.0) for LTE. BOM option to 1 x M.2 3042/3050/3052 Key B (USB 2.0, USB 3.2 (Gen1)) for LTE/5G	1 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0) for LTE. BOM option to 1 x M.2 3042 Key B (USB 2.0) for LTE
M.2 Socket	1 x M.2 3042 Key B (USB 2.0, USB 3.2 (Gen1)) for LTE/5G	1 x M.2 3042/3052 Key B (USB 2.0, USB 3.2 (Gen1)) for LTE/5G		3 x M.2 3042/3050/3052 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G	1 x M.2 3042/3050/3052 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G
Expansion PCIe Slot	N/A	1 x PCIe x16, 1 x PCIe x4 + proprietary, 1 x PCIe x4		PCIe x16	1 x PCIe x16, 3 x PCIe x4
GNSS	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)		VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)
Power Input	DC 9V to 36V	DC 9V to 36V		DC 24/110V (w/ isolation)	DC 24/36V (w/o isolation)
Ignition Control	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting		Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Power Management	Low voltage protection & configuration via software		Low voltage protection & configuration via software		
Ingress Protection	N/A	N/A		N/A	N/A
MIPI Interface	N/A	N/A		N/A	N/A
Certification	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13		CE, FCC Class A, UKCA, EN50155	CE, FCC Class A, UKCA, EN50155
OS	Win 10/11, Linux (Kernel 4.x)	Win 10/11, Linux (Kernel 4.x)		Win 10/11, Linux (Kernel 4.x)	Win 10/11, Linux (Kernel 4.x)
Dimensions (mm)	260 x 259.7 x 90.1	207.4 x 176 x 350 (w/ fan kit)		483 x 400 x 95	215 x 205 x 385
Operating Temperature	-30°C to 60°C	-30°C to 60°C		-40°C to 70°C (OT4)	-40°C to 70°C (OT4)

* Based on different MXM, the quantity will be different.

	NEW	NEW	Coming soon	Coming soon
				
ATC 3200	ATC 3530-IP7-4M	ATC 3530-IP7-4C	ATC 3750-IP4-6C	ATC 3750-IP4-6M
NVIDIA Tegra X2 2 Core NVIDIA Denver2 and 4 Core ARM A57	NVIDIA Xavier NX 3 x 2 Core Carmel CPU@1.9GHz		NVIDIA AGX Orin 12-core Arm® Cortex®-A78AE 64-bit, 2.0GHz	
N/A	N/A		N/A	
Fanless	Fanless		Fan/Fanless	
Onboard LPDDR4 1600MHz 8GB	Onboard LPDDR4 1600MHz 16GB		Onboard LPDDR5, 32GB	
32GB eMMC	16GB eMMC		64GB eMMC	
1 x Removable SD3.0 1 x 2.5" SATA 3.0 SSD (15mm height)	1 x Removable SD 4.0 1 x M.2 2280 Key M NVMe SSD (PCIe 3.0 x4)		2 x M.2 2280 Key M NVMe SSD (PCIe 4.0 x4)	
NVIDIA Pascal 256-core integrated GPU @1.2GHz	NVIDIA Volta 384-core, 48 tensor-core integrated GPU @1.1GHz		NVIDIA Ampere 2048-core, 64 Tensor-core integrated GPU @1.0GHz	
1 x HDMI	1 x HDMI		1 x HDMI	
1 x Mic-in, 1 x Line-out	N/A		N/A	
2 x Independent Intel® 10/100/1000 (802.3af/at). Total 30W	1 x Intel® 10/100/1000 (M12 X-coded) 1 x Intel® 10/100/1000 (M12 X-coded) Option for PoE (w/ 802.3af/at). Total 30W	1 x Intel® 10/100/1000 (M12 X-coded) 4 x GbE (802.3at/af, M12). Total 30W	2 x 10GbE 6 x 2.5GbE (802.3af/at). Total 60W	
2 x USB 3.2 (Gen1), 1 x USB 2.0, 1 x OTG, 1 x Console	2 x USB 3.2 (Gen1), 1 x OTG, 1 x Console		3 x USB 3.2 (Gen2), 1 x OTG, 1 x Console	
2 x RS232 (Tx, Rx)/ 422/485	1 x RS232 (Tx, Rx) 1 x RS232 (Tx, Rx, RTS, CTS)		2 x RS232 (Full)	
4 x DI (w/ isolation) 4 x DO (w/ isolation)	4 x DI 4 x DO 1 x CANBus 2.0B (w/ isolation)		4 x DI 4 x DO	
12V(2A) & 5V(1A)	N/A		N/A	
2	2		2	
1	1		1	
1 x (USB 2.0, PCIe 2.0)	1 x (USB 2.0, PCIe 3.0)		1 x (USB 2.0, PCIe 4.0)	
1 x M.2 3042/3052 Key B (USB2.0, USB3.2 (Gen1)) for LTE/5G	1 x M.2 3042/3052 Key B (USB 2.0, USB 3.2 (Gen1)) for LTE/5G		1 x M.2 3042/3052 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G	
N/A	N/A		N/A	
VIOB-GPS-02 module (u-blox NEO-M8N) DC 9V to 36V Yes, w/ 8 level delay time setting	VIOB-GPS-02 module (u-blox NEO-M8N) DC 9V to 36V Yes, w/ 8 level delay time setting		VIOB-GPS-06 module (u-blox NEO-M9N) DC 9V to 36V Yes, w/ 8 level delay time setting	
Low voltage protection & configuration via software				
IP50	IP67		IP54	
4 (V-by-One HS) CE, FCC Class A, UKCA, E13 JetPack 4.4 BSP w/ Ubuntu 18.04 (L4T) 180 x 156 x 60 -30°C to 70°C	4 (Thine, V-by-One HS) CE, FCC Class A, UKCA, E13 JetPack 4.5 BSP w/ Ubuntu 18.04 (L4T) 213 x 167 x 82.8 -30°C to 70°C	N/A	N/A CE, FCC Class A, UKCA, E13, EN50155 the latest JetPack BSP w/ Ubuntu 18.04 (L4T) 213 x 210 x 85 -30°C to 70°C	6 (Thine, V-by-One HS) CE, FCC Class A, UKCA, E13, EN50155 the latest JetPack BSP w/ Ubuntu 18.04 (L4T) 213 x 210 x 85 -30°C to 70°C

Vehicle Telematics Computer

Model			
	VTC 210	VTC 1910-S	VTC 1911-IPK
CPU	Rockchip RK3328	Intel Atom® E3815, 1 Core, 1.46GHz	Intel Atom® E3815, 1 Core, 1.46GHz
Chipset	N/A	N/A	N/A
Memory	DDR4 2GB onboard up to 4GB	1 x DDR3L 1600 SO-DIMM, 2GB (default) up to 8GB	1 x DDR3L 1600 SO-DIMM, 2GB (default) up to 8GB
Storage	eMMC 5.1, 16GB	1 x SATA 2.0 mSATA	1 x SATA 2.0 mSATA
Second Storage	1 x Micro SD	1 x SATA DOM	1 x 2.5" SSD (9.5mm) or 1 x SATA DOM
Video Out	1 x HDMI	1 x VGA	1 x VGA, 1 x HDMI (optional)
Audio	N/A	1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out
Ethernet	2 x 10/100/1000 LAN switch	1 x Intel® 10/100/1000	2 x Intel® 10/100/1000
PoE	N/A	N/A	N/A
USB	1 x External USB 2.0. 1 x Internal USB 2.0 for Wi-Fi	1 x USB 3.0, 1 x USB 2.0	1 x USB 2.0
COM	1 x RS232 (full)	2 x RS232 (Tx, Rx), 1 x RS485	2 x RS232 (Tx, Rx), 1 x RS485
DIO	N/A	3 x DI, 3 x DO	3 x DI, 3 x DO
CAN	N/A	1 x CANBus 2.0B	1 x CANBus 2.0B
DC Output	N/A	N/A	N/A
SMBus	N/A	N/A	N/A
SIM Socket	1	2	2
WWAN	1	1	1
mini-PCIe Socket	N/A	1 x (PCIe 2.0/SATA 2.0) 1 x (USB 2.0) for LTE	1 x (USB 2.0, PCIe2.0/SATA 2.0) 1 x (USB 2.0) for LTE
M.2 Socket	1 x M.2 3042 Key B (USB 2.0, USB 3.2 (Gen1)) for LTE	N/A	N/A
GNSS	VIOB-GPS-06 module (u-blox NEO-M9N)	Onboard u-blox NEO-M8N	Onboard u-blox NEO-M8N
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Ignition Control	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Power Management	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
Internal Back Up Battery	N/A	N/A	N/A
Ingress Protection	N/A	N/A	IP67
Certification	CE, FCC Class A, UKCA, E13	CE, FCC Class A, E13	CE, FCC Class A, E13, EN50155
OS	Linux	Win 10, Win 8, Win 7, WES 7, Linux (Kernel 4.x)	Win 10, Win 8, Win 7, WES 7, Linux (Kernel 4.x)
Dimensions (mm)	130 x 100 x 31	130 x 120 x 35	185 x 167 x 56.5
Operating Temperature	0°C to 70°C	-40°C to 70°C	-40°C to 70°C

			
VTC 1011-C2K	VTC 1011-C2VK	VTC 1020	VTC 1020-PA
Intel Atom® E3825, 2 Core, 1.33GHz	Intel Atom® E3825, 2 Core, 1.33GHz	Intel Atom® x5-E3930, 2 Core, 1.8GHz	Intel Atom® x5-E3930, 2 Core, 1.8GHz
N/A	N/A	N/A	N/A
1 x DDR3L 1600 SO-DIMM, 2GB (default) up to 8GB	1 x DDR3L 1600 SO-DIMM, 2GB (default) up to 8GB	1 x DDR3L 1866 SO-DIMM, 4GB (default) up to 8GB	1 x DDR3L 1866 SO-DIMM, 4GB (default) up to 8GB
1 x 2.5" SATA 2.0 SSD (9.5mm)	1 x 2.5" SATA 2.0 SSD (9.5mm)	1 x 2.5" SATA 3.0 SSD (9.5mm)	1 x 2.5" SATA 3.0 SSD (9.5mm)
1 x mSATA (occupied mini-PCIe socket)	1 x mSATA (occupied mini-PCIe socket)	1 x mSATA (occupied mini-PCIe socket)	1 x mSATA (occupied mini-PCIe socket)
1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI or 1 x ultraONE+	1 x VGA, 1 x HDMI	1 x VAG, 1 x HDMI, 1 x LVDS
1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out	1 x Mic-in, 3 x Line-out (selectable)
2 x Intel® 10/100/1000 (exclusion with PoE)	2 x Intel® 10/100/1000 (exclusion with PoE)	1 x Intel® 10/100/1000	1 x Intel® 10/100/1000
2 x Intel® 10/100/1000 (w/ 802.3at/af). Total 30W	2 x Intel® 10/100/1000 (w/ 802.3at/af). Total 30W	N/A	N/A
2 x USB 2.0	2 x USB 2.0	2 x USB 3.2 (Gen1)	2 x USB 3.2 (Gen1)
1 x RS232 (full), 1 x RS232 (Tx, Rx)/RS422/485	1 x RS232 (full), 1 x RS232 (Tx, Rx)/RS422/485	5 x RS232 (Tx, Rx), 2 x RS485	5 x RS232 (Tx, Rx), 2 x RS485
4 x DI, 4 x DO	4 x DI, 4 x DO	5 x Programmable DIO	5 x Programmable DIO
1 x CANBus 2.0B	1 x CANBus 2.0B	1 x CANBus 2.0B	1 x CANBus 2.0B
12V (2A)	12V (2A)	12V (2A)	12V (2A)
1	1	1	1
2	2	1	1
1	1	1	1
1 x (USB 2.0, PCIe 2.0/SATA 2.0) 1 x (USB 2.0) for LTE	1 x (USB 2.0, PCIe 2.0/SATA2.0) 1 x (USB 2.0) for LTE	1 x (USB 2.0, PCIe 2.0/SATA 3.0) 1 x (USB 2.0) for LTE	1 x (USB 2.0, PCIe 2.0/SATA 3.0) 1 x (USB 2.0) for LTE
N/A	N/A	N/A	N/A
VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)
DC 9V to 36V	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13
Win 10, Win 8, Win 7, WES 7, Linux (Kernel 4.x)	Win 10, Win 8, Win 7, WES 7, Linux (Kernel 4.x)	Win 10, Linux (Kernel 4.x)	Win 10, Linux (Kernel 4.x)
185 x 150.9 x 45	185 x 150.9 x 45	185 x 120 x 45	185 x 120 x 50
-40°C to 70°C (LAN mode) -40°C to 60°C (PoE mode)	-40°C to 70°C (LAN mode) -40°C to 60°C (PoE mode)	-40°C to 70°C	-40°C to 70°C

Vehicle Telematics Computer

Model			
	VTC 1010	VTC1021-BK	VTC1021-C2K
CPU	Intel Atom® E3827, 2 Core, 1.75GHz	Intel Atom® x5-E3940, 4 Core, 1.8GHz	Intel Atom® x5-E3940, 4 Core, 1.8GHz
Chipset	N/A	N/A	N/A
Memory	1 x DDR3L 1600 SO-DIMM, 2GB (default) up to 8GB	1 x DDR3L 1866 SO-DIMM, 4GB (default) up to 8GB	1 x DDR3L 1866 SO-DIMM, 4GB (default) up to 8GB
Storage	1 x 2.5" SATA 2.0 SSD (9.5mm)	1 x 2.5" SATA 3.0 SSD (9.5mm)	1 x 2.5" SATA 3.0 SSD (9.5mm)
Second Storage	1 x SD (occupied mini-PCIe socket)	1 x mSATA (occupied mini-PCIe socket)	1 x mSATA (occupied mini-PCIe socket)
Video Out	1 x VGA, 1 x DP	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI
Audio	2 x Mic-in, 2 x Line-out	1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out
Ethernet	1 x Intel® 10/100/1000	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000
PoE	N/A	N/A	2 x Intel® 10/100/1000 (w/ 802.3at/af). Total 60W
USB	1 x USB 3.2 (Gen1), 2 x USB 2.0	1 x USB 3.2 (Gen1), 2 x USB 2.0	1 x USB 3.2 (Gen1), 2 x USB 2.0
COM	2 x RS232 (full), 1 x RS422/485	1 x RS232 (full), 1 x RS232 (Tx, Rx), 1 x RS422/485	1 x RS232 (full), 1 x RS232 (Tx, Rx), 1 x RS422/485
DIO	6 x Programmable DIO	3 x DI, 3 x DO	3 x DI, 3 x DO
CAN	1 x CANBus 2.0B	1 x CANBus 2.0B	1 x CANBus 2.0B
DC Output	12V (1A)	12V (2A)	12V (2A)
SMBus	N/A	1	1
SIM Socket	2	2	2
WWAN	2	1	1
mini-PCIe Socket	2 x (USB 2.0, PCIe 2.0) 1 x (PCIe 2.0/SATA 2.0) 1 x (USB 2.0) for LTE	1 x (USB 2.0, PCIe 2.0/SATA 3.0) 1 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0) for LTE	1 x (USB 2.0, PCIe 2.0/SATA 3.0) 1 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0) for LTE
M.2 Socket	N/A	N/A	N/A
GNSS	VIOB-GPS-02 module (u-blox NEO-M8N)	Onboard u-blox NEO-M8N	Onboard u-blox NEO-M8N
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Ignition Control	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Power Management	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
Internal Back Up Battery	N/A	Optional	N/A
Ingress Protection	N/A	N/A	N/A
Certification	CE, FCC Class B, UKCA, E13	CE, FCC Class B, UKCA, E13	CE, FCC Class B, UKCA, E13
OS	Win 10, Win 8, Win 7, WES 7, Linux (Kernel 4.x)	Win 10, Linux (Kernel 4.x)	Win 10, Linux (Kernel 4.x)
Dimensions (mm)	180 x 180 x 50	180 x 180 x 50	180 x 180 x 50
Operating Temperature	-30°C to 70°C	-40°C to 70°C	-40°C to 70°C

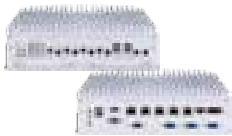
Coming soon 	Coming soon 	Coming soon 
VTC 1030	VTC 1031	VTC 1031-C2
Intel Atom® x6211E, 2 Core, 1.3GHz	Intel Atom® x6413E, 4 Core, 1.5GHz	Intel Atom® x6413E, 4 Core, 1.5GHz
N/A	N/A	N/A
1 x DDR4 2666 SO-DIMM, 4GB (default) up to 32GB	1 x DDR4 2666 SO-DIMM, 4GB (default) up to 32GB	1 x DDR4 2666 SO-DIMM, 4GB (default) up to 32GB
1 x 2.5" SATA 3.0 SSD (9.5mm)	1 x 2.5" SATA 3.0 SSD (9.5mm)	1 x 2.5" SATA 3.0 SSD (9.5mm)
1 x mSATA (occupied mini-PCIe socket)	1 x M.2 2280 Key M SSD (SATA 3.0)	1 x M.2 2280 Key M SSD (SATA 3.0)
1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI
1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out
2 x Intel® 10/100/1000/2500	1 x 10/100/1000/2500 1 x Intel® 10/100/1000	1 x 10/100/1000/2500 1 x Intel® 10/100/1000
N/A	N/A	2 x Independent Intel® 10/100/1000 (w/ 802.3at/af). Total 60W
2 x USB 3.2 (Gen 2)	1 x USB 3.2 (Gen 2), 3 x USB 2.0	1 x USB 3.2 (Gen 2), 3 x USB 2.0
2 x RS232 (full)/422/485	1 x RS232 (full)/422/485, 1 x RS232 (Tx, Rx), 2 x RS485	1 x RS232 (full)/422/485, 1 x RS232 (Tx, Rx), 2 x RS485
5 x DI, 4 x DO	5 x DI, 4 x DO	5 x DI, 4 x DO
1 x CANBus 2.0B	1 x CANBus 2.0B	1 x CANBus 2.0B
12V (2A)	12V (2A)	12V (2A)
N/A	N/A	N/A
2	2	2
1	1	1
1 x (USB 2.0, PCIe 3.0/SATA 3.0)	1 x (USB 2.0, PCIe 3.0). BOM option to 1 x M.2 3042 Key B socket (USB 2.0, USB 3.2 Gen 2x1) for LTE/5G NR	1 x (USB 2.0, PCIe 3.0). BOM option to 1 x M.2 3042 Key B socket (USB 2.0, USB 3.2 Gen 2x1) for LTE/5G NR
1 x M.2 3042/3050/3052 Key B (USB 2.0, USB 3.2 (Gen 2)) for LTE/5G 1 x M.2 2230 Key E (USB 2.0, PCIe 3.0, PCIe 3.0)	1 x M.2 3042/3050/3052 Key B (USB 2.0, USB 3.2 (Gen 2)) for LTE/5G 1 x M.2 2230 Key E (USB 2.0, PCIe 3.0, PCIe 3.0). BOM option to 1 x M.2 2230 Key E (USB 2.0, PCIe 3.0 x2)	1 x M.2 3042/3050/3052 Key B (USB 2.0, USB 3.2 (Gen 2)) for LTE/5G 1 x M.2 2230 Key E (USB 2.0, PCIe 3.0, PCIe 3.0). BOM option to 1 x M.2 2230 Key E (USB 2.0, PCIe 3.0 x2)
VIOB-GPS-06 module (u-blox NEO-M9N)	VIOB-GPS-06 module (u-blox NEO-M9N)	VIOB-GPS-06 module (u-blox NEO-M9N)
DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
N/A	N/A	N/A
N/A	N/A	N/A
CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13
Win 10, Win 11, Linux (Kernel 4.x)	Win 10, Win 11, Linux (Kernel 4.x)	Win 10, Win 11, Linux (Kernel 4.x)
185 x 120 x 45	180 x 180 x 50	180 x 180 x 50
-40°C to 70°C	-40°C to 70°C	-40°C to 70°C

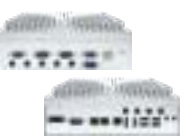
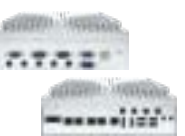
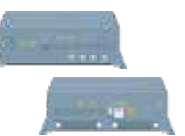
Vehicle Telematics Computer

Model			
	VTC 6210-BK	VTC 6210-VR4	VTC 6220-BK
CPU	Intel Atom® E3845, 4 Core, 1.91GHz	Intel Atom® E3845, 4 Core, 1.91GHz	Intel Atom® x7-E3950, 4 Core, 2.0GHz
Chipset	N/A	N/A	N/A
Memory	1 x DDR3L 1333 SO-DIMM, 2GB (default) up to 8GB	1 x DDR3L 1333 SO-DIMM, 2GB (default) up to 8GB	1 x DDR3L 1866 SO-DIMM, 4GB (default) up to 8GB
Storage	1 x 2.5" SATA 2.0 SSD/HDD (removable, 9.5mm)	1 x 2.5" SATA 2.0 SSD/HDD (removable, 9.5mm)	2 x 2.5" SATA 3.0 SSD/HDD (removable, 9.5mm)
Second Storage	1 x CFast (external accessible)	1 x CFast (external accessible)	N/A
Video Out	1 x VGA, 1 x DP	VGA, DP, 4 x (Video-in + Audio-in)	1 x VGA, 1 x HDMI, 1 x LVDS (optional), 1 x ultraONE+ (optional)
Audio	2 x Mic-in, 2 x Line-out	2 x Mic-in, 2 x Line-out	2 x Mic-in, 2 x Line-out
Ethernet	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000	3 x Intel® 10/100/1000 (2 x LAN exclusion with PoE)
PoE	N/A	N/A	2 x Independent Intel® 10/100/1000 (w/ 802.3at/af). Total 30W (BOM optional)
USB	1 x USB 3.2 (Gen1), 2 x USB 2.0	1 x USB 3.2 (Gen1), 2 x USB 2.0	2 x USB 3.2 (Gen1), 1 x USB 2.0
COM	2 x RS232 (full), 1 x RS422/485	1 x RS232 (full), 1 x RS422/485	2 x RS232 (full), 1 x RS422/485
DIO	8 x Programmable PC GPIO, 2 x MCU-DI, 2 x MCU-DO	8 x Programmable PC GPIO, 2 x MCU-DI, 2 x MCU-DO	4 x DI, 4 x DO
CAN	1 x CANBus 2.0B	1 x CAN Bus 2.0B	1 x CANBus 2.0B (w/ isolation)
DC Output	12V (2A)	12V (2A)	12V (2A)
SMBus	1	1	1
SIM Socket	3	3	4
WWAN	2	2	2
mini-PCIe Socket	2 x (USB 2.0, PCIe 2.0) 2 x (USB 2.0) for LTE	2 x (USB 2.0, PCIe 2.0) 2 x (USB 2.0) for LTE	2 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0) for LTE. BOM Option to 1 x M.2 3042 Key B (USB 2.0, USB 3.2 (Gen1)) for LTE/5G
M.2 Socket	N/A	N/A	1 x M.2 3042 Key B (USB 2.0, USB 3.2 (Gen1)) for LTE/5G
GNSS	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Ignition Control	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Power Management	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
Internal Back Up Battery	N/A	N/A	Optional
Ingress Protection	N/A	N/A	N/A
Certification	CE, FCC Class B, E13	CE, FCC Class B, UKCA, E13	CE, FCC Class A, UKCA, E13
OS	Win 10, Win 8, Win 7, WES 7, Linux (Kernel 4.x)	Win 10, Win 8, Win 7, WES 7, Linux (Kernel 4.x)	Win 10, Linux (Kernel 4.x)
Dimensions (mm)	260 x 176 x 50	260 x 176 x 50	260 x 196 x 50
Operating Temperature	-30°C to 70°C	-30°C to 70°C	-40°C to 70°C (w/o internal backup battery)

		
VTC 6221	VTC 6222-C4S	VTC 7250-7C8
Intel Atom® x7-E3950, 4 Core, 2.0GHz	Intel Atom® x7-E3950, 4 Core, 2.0GHz	Intel® Core™ i7-8700T, 6 Core, 4.0GHz
N/A	N/A	Intel® Q370
1 x DDR3L 1600 SO-DIMM, 4GB (default) up to 8GB	1 x DDR3L 1866 SO-DIMM, 4GB (default) up to 8GB	2 x DDR4 2666 SO-DIMM, 4GB + 4GB (default) up to 32GB+32GB
1 x 2.5" SATA 3.0 SSD (removable, 9.5mm)	2 x 2.5" SATA 3.0 SSD (removable, 15mm)	2 x 2.5" SATA 3.0 SSD (removable, 15mm)
1 x CFast (external accessible), 1 x mSATA (occupied CFast, BOM optional)	1 x SD (external accessible), 1 x Internal USB DOM	2 x mSATA 3.0 (BIOS selection)
2 x VGA, 1 x HDMI	1 x VGA, 2 x HDMI	1 x VGA, 1 x HDMI, 1 x ultraONE+
1 x Mic-in, 2 x Line-out	1 x Mic-in, 2 x Line-out	1 x Mic-in, 1 x Line-out
2 x Intel® 10/100/1000, (BOM option up to 3)	1 x Intel® 10/100/1000	1 x Intel® 10/100/1000
N/A	4 x Intel® 10/100/1000 (w/ 802.3at/af). Total 60W	8 x Independent Intel® 10/100/1000 (w/ 802.3at/af). Total 60W
1 x USB 3.2 (Gen1), 3 x USB 2.0	1 x USB 3.2 (Gen1), 2 x USB 2.0	6 x USB 3.2 (Gen2)
1 x RS232 (full), 1 x RS232 (Tx, Rx), 1 x RS485	1 x RS232 (full), 1 x RS232 (Tx, Rx), 1 x RS422/485	2 x RS232 (full), 1 x RS232 (full)/422/485
4 x DI, 4 x DO	4 x DI, 4 x DO (w/ isolation)	4 x DI, 4 x DO
1 x CANBus 2.0B (w/ isolation)	1 x CANBus 2.0B (w/ isolation)	1 x CANBus 2.0B (w/ isolation)
12V (2A)	12V (2A)	12V (2A)
N/A	N/A	N/A
6 (BOM option up to 8, eSIM BOM optional)	2 (eSIM BOM optional)	3 (eSIM BOM optional)
3 (BOM option up to 3)	1	2
2 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0) for LTE	2 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0) for LTE. BOM option to 1 x M.2 3042 Key B (USB 2.0, USB 3.2 (Gen1)) LTE/5G supported	2 x (USB 2.0, PCIe 3.0/SATA 3.0) 1 x (USB 2.0) for LTE. BOM option to 1 x M.2 3042 Key B (USB 2.0, USB 3.1) for LTE/5G
1 x M.2 3042/3052 Key B (USB 2.0, USB 3.0) for LTE/5G 1 x M.2 3042 Key B (USB 2.0, USB 3.2 (Gen1)) for LTE/5G	N/A	1 x M.2 3042 Key B (USB 2.0, USB 3.2 (Gen1)) for LTE/5G
VIOB-GPS-02 module (u-blox NEO-M8N)	u-blox NEO-M8N onboard	VIOB-GPS-02 module (u-blox NEO-M8N)
DC 9V to 36V	DC 9V to 48V	DC 9V to 36V
Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
N/A	N/A	N/A
N/A	N/A	N/A
CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13
Win 10, Linux (Kernel 4.x)	Win 10, Linux (Kernel 4.x)	Win 10/11, Linux (Kernel 4.x)
260 x 196 x 50	260 x 196 x 66.5	260 x 256 x 90.1
-40°C to 70°C	-40°C to 70°C	-30°C to 60°C

Vehicle Telematics Computer

Model			
	VTC 7251	VTC 7251-7C4	VTC 7252-7C4IP
CPU	Intel® Core™ i7-8700T, 6 Core, 4.0GHz	Intel® Core™ i7-8700T, 6 Core, 4.0GHz	Intel® Core™ i7-9700TE, 8 Core, 3.8GHz
Chipset	Intel® Q370	Intel® Q370	Intel® C246
Memory	2 x DDR4 2666 SO-DIMM, 4GB + 4GB (default) up to 32GB+32GB	2 x DDR4 2666 SO-DIMM, 4GB + 4GB (default) up to 32GB+32GB	2 x DDR4 2666 SO-DIMM, 4GB + 4GB (default) up to 32GB+32GB
Storage	2 x 2.5" SATA 3.0 SSD (removable, 15mm)	2 x 2.5" SATA 3.0 SSD (removable, 15mm)	2 x 2.5" SATA 3.0 SSD (9.5mm)
Second Storage	2 x mSATA 3.0 (BIOS selection)	2 x mSATA 3.0 (BIOS selection)	2 x mSATA 3.0 (BIOS selection), 1 x CFast (external accessible)
Video Out	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI (optional)
Audio	1 x Mic-in, 2 x Line-out	1 x Mic-in, 2 x Line-out	1 x Mic-in, 2 x Line-out
Ethernet	2 x Intel® 10/100/1000	1 x Intel® 10/100/1000	2 x Intel® 10/100/1000
PoE	N/A	4 x Independent Intel® 10/100/1000 (w/ 802.3at/af). Total 60W	4 x Independent Intel® 10/100/1000 (w/ 802.3at/af). Total 60W
USB	6 x USB 3.2 (Gen2)	6 x USB 3.2 (Gen2)	2 x USB 3.2 (Gen2), 2 x USB 2.0
COM	2 x RS232 (full), 1 x RS232 (full)/422/485	2 x RS232 (full), 1 x RS232 (full)/422/485	2 x RS232 (full), 1 x RS232 (full)/422/485
DIO	4 x DI, 4 x DO	4 x DI, 4 x DO	3 x DI, 3 x DO
CAN	1 x CANBus 2.0B (w/ isolation)	1 x CANBus 2.0B (w/ isolation)	2 x CANBus 2.0B (w/ isolation)
DC Output	12V (2A)	12V (2A)	12V (2A)
SMBus	N/A	N/A	N/A
SIM Socket	6 (BOM option up to 8, eSIM BOM optional)	6 (BOM option up to 8, eSIM BOM optional)	2 (eSIM BOM optional)
WWAN	3 (BOM option up to 4)	3 (BOM option up to 4)	1
mini-PCIe Socket	2 x (USB 2.0, PCIe 3.0/SATA 3.0) 2 x (USB 2.0) for LTE. BOM option to 2 x M.2 3042 Key B (USB 2.0, USB 3.1) for LTE/5G	2 x (USB 2.0, PCIe 3.0/SATA 3.0) 2 x (USB 2.0) for LTE. BOM option to 2 x M.2 3042 Key B (USB 2.0, USB 3.1) for LTE/5G	2 x (USB 2.0, PCIe 3.0/SATA 3.0)
M.2 Socket	1 x M.2 3042/3052 Key B (USB 2.0, USB 3.2 (Gen1)) for LTE/5G	1 x M.2 3042/3052 Key B (USB 2.0, USB 3.2 (Gen1)) for LTE/5G	1 x M.2 3042/3052 Key B (USB 2.0, USB 3.2 (Gen1)) for LTE/5G 1 x M.2 2230 Key E (USB 2.0, 2 x PCIe 3.0). BOM option to 1 x mini-PCIe (USB 2.0, PCIe 3.0).
GNSS	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Ignition Control	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Power Management	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
Internal Back Up Battery	N/A	N/A	N/A
Ingress Protection	N/A	N/A	IP65
Certification	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13
OS	Win 10/11, Linux (Kernel 4.x)	Win 10/11, Linux (Kernel 4.x)	Win 10/11, Linux (Kernel 4.x)
Dimensions (mm)	260 x 256 x 83.5	260 x 256 x 83.5	260 x 256 x 66.5
Operating Temperature	-30°C to 70°C	-30°C to 60°C	-30°C to 60°C

					
VTC 7260-5	VTC 7260-5C4	VTC 7260-7	VTC 7260-7C4	VTC 7270-x	VTC 7270-xC4
Intel® Core™ i5-1145GRE, 4 Core, 2.6GHz	Intel® Core™ i5-1145GRE, 4 Core, 2.6GHz	Intel® Core™ i7-1185GRE, 4 Core, 2.8GHz	Intel® Core™ i7-1185GRE, 4 Core, 2.8GHz	Intel® Alder Lake-S Core™ i	Intel® Alder Lake-S Core™ i
N/A	N/A	N/A	N/A	Intel® R680E	Intel® R680E
2 x DDR4 3200 SO-DIMM, 4GB+4GB (default) up to 32GB+32GB, ECC support	2 x DDR4 3200 SO-DIMM, 4GB+4GB (default) up to 32GB+32GB, ECC support	2 x DDR4 3200 SO-DIMM, 4GB+4GB (default) up to 32GB+32GB, ECC support	2 x DDR4 3200 SO-DIMM, 4GB+4GB (default) up to 32GB+32GB, ECC support	2 x DDR5 4800 SO-DIMM, 8GB (default) up to 32GB+32GB, ECC support	2 x DDR5 4800 SO-DIMM, 8GB (default) up to 32GB+32GB, ECC support
1 x 2.5" SATA 3.0 SSD (15mm)	1 x 2.5" SATA 3.0 SSD (15mm)	1 x 2.5" SATA 3.0 SSD (15mm)	1 x 2.5" SATA 3.0 SSD (15mm)	2 x 2.5" SATA 3.0 SSD (removable, 15mm)	2 x 2.5" SATA 3.0 SSD (removable, 15mm)
1 x mSATA 3.0, 1 x M.2 2280 Key M NVMe (PCIe4.0 x4)	1 x mSATA 3.0, 1 x M.2 2280 Key M NVMe (PCIe4.0 x4)	1 x mSATA 3.0, 1 x M.2 2280 Key M NVMe (PCIe4.0 x4)	1 x mSATA 3.0, 1 x M.2 2280 Key M NVMe (PCIe4.0 x4)	1 x mSATA 3.0 (BIOS selection), 1 x M.2 2280 Key M NVMe (PCIe4.0 x4)	1 x mSATA 3.0 (BIOS selection), 1 x M.2 2280 Key M NVMe (PCIe4.0 x4)
1 x VGA, 1 x HDMI, 1 x DP	1 x VGA, 1 x HDMI, 1 x DP	1 x VGA, 1 x HDMI, 1 x DP	1 x VGA, 1 x HDMI, 1 x DP	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI
1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out
1 x Intel® 10/100/1000 (WoL, PXE, lamt support), 2 x Independent Intel® 2.5GbE	1 x Intel® 10/100/1000 (WoL, PXE, lamt support)	1 x Intel® 10/100/1000 (WoL, PXE, lamt support), 2 x Independent Intel® 2.5GbE	1 x Intel® 10/100/1000 (WoL, PXE, lamt support)	1 x Intel® 10/100/1000 (WoL, PXE, lamt support), 4 x Independent Intel® 2.5GbE	1 x Intel® 10/100/1000 (WoL, PXE, lamt support)
N/A	2 x independent Intel® GbE, 2 x independent Intel® 2.5GbE (IEEE 802.3at/af, total 60W)	N/A	2 x independent Intel® GbE, 2 x independent Intel® 2.5GbE (IEEE 802.3at/af, total 60W)	N/A	4 x independent Intel® 2.5GbE (IEEE 802.3at/af, total 60W)
1 x USB 3.2 (Gen2), 2 x USB 3.2 (Gen1), 1 x USB 2.0	1 x USB 3.2 (Gen2), 2 x USB 3.2 (Gen1), 1 x USB 2.0	1 x USB 3.2 (Gen2), 2 x USB 3.2 (Gen1), 1 x USB 2.0	1 x USB 3.2 (Gen2), 2 x USB 3.2 (Gen1), 1 x USB 2.0	6 x USB 3.2 (Gen2)	6 x USB 3.2 (Gen2)
1 x RS232 (Full), 2 x RS232 (Full)/422/485	2 x RS232 (Full)/422/485	1 x RS232 (Full), 2 x RS232 (Full)/422/485	2 x RS232 (Full)/422/485	2 x RS232 (Full), 2 x RS232 (Full)/422/485	2 x RS232 (Full), 2 x RS232 (Full)/422/485
4 x DI, 4 x DO	4 x DI, 4 x DO	4 x DI, 4 x DO	4 x DI, 4 x DO	4 x DI, 4 x DO	4 x DI, 4 x DO
1 x CANBus 2.0B (w/ isolation)	1 x CANBus 2.0B (w/ isolation)	1 x CANBus 2.0B (w/ isolation)	1 x CANBus 2.0B (w/ isolation)	2 x CAN Bus 2.0B (w/ isolation)	2 x CAN Bus 2.0B (w/ isolation)
N/A	N/A	N/A	N/A	12V (2A)	12V (2A)
N/A	N/A	N/A	N/A	N/A	N/A
4	4	4	4	4	4
1~2	1~2	1~2	1~2	1~2	1~2
1 x (USB 2.0, PCIe 3.0)	1 x (USB 2.0, PCIe 3.0)	1 x (USB 2.0, PCIe 3.0)	1 x (USB 2.0, PCIe 3.0)	1 x (SATA3.0, PCIe 3.0) 1 x (USB3.2 (Gen2), PCIe3.0/ USB2.0)	1 x (SATA3.0, PCIe 3.0) 1 x (USB3.2 (Gen2), PCIe3.0/ USB2.0)
1 x M.2 3042/3052 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G 1 x M.2 3042 Key E (2 PCIe 3.0 x1, USB2.0) for Wi-Fi/Google Coral AI card	1 x M.2 3042/3052 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G 1 x M.2 3042 Key E (2 PCIe 3.0 x1, USB2.0) for Wi-Fi/Google Coral AI card	1 x M.2 3042/3052 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G 1 x M.2 3042 Key E (2 PCIe 3.0 x1, USB2.0) for Wi-Fi/Google Coral AI card	1 x M.2 3042/3052 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G 1 x M.2 3042 Key E (2 PCIe 3.0 x1, USB2.0) for Wi-Fi/Google Coral AI card	1 x M.2 3042/3052 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G 1 x M.2 3042 Key E (2 PCIe3.0 x1, USB2.0) for Wi-Fi/Google Coral AI card	1 x M.2 3042/3052 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G 1 x M.2 3042 Key E (2 PCIe3.0 x1, USB2.0) for Wi-Fi/Google Coral AI card
VIOB-GPS-06 module (u-blox NEO-M9N)	VIOB-GPS-06 module (u-blox NEO-M9N)	VIOB-GPS-06 module (u-blox NEO-M9N)	VIOB-GPS-06 module (u-blox NEO-M9N)	VIOB-GPS-06 module (u-blox NEO-M9N)	VIOB-GPS-06 module (u-blox NEO-M9N)
DC 9V to 36V	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13
Win 10/11, Linux (Kernel 5.x)	Win 10/11, Linux (Kernel 5.x)	Win 10/11, Linux (Kernel 5.x)	Win 10/11, Linux (Kernel 5.x)	Win 10/11, Linux (Kernel 5.x)	Win 10/11, Linux (Kernel 5.x)
210 x 170 x 55 (TBC)	210 x 170 x 55 (TBC)	210 x 170 x 55 (TBC)	210 x 170 x 55 (TBC)	260 x 210 x 85 (TBC)	260 x 210 x 85 (TBC)
-40°C to 70°C	-40°C to 65°C	-40°C to 70°C	-40°C to 65°C	-40°C to 65°C	-40°C to 65°C

Railway Computer - Box PC

Model				
	nROK 1020-A	nROK 1030-A	nROK 1031-A	nROK 1031-AC2
CPU	Intel Atom® x5-E3930, 2 Core, 1.3GHz	Intel Atom® x6211E, 2 Core, 1.3GHz	Intel Atom® x6413E, 4 Core, 1.5GHz	Intel Atom® x6413E, 4 Core, 1.5GHz
Chipset	N/A	N/A	N/A	N/A
Memory	1 x DDR3L 1866 SO-DIMM, 4GB (default) up to 32GB	1 x DDR4 2666 SO-DIMM, 4GB (default) up to 32GB	1 x DDR4 2666 SO-DIMM, 4GB (default) up to 32GB	1 x DDR4 2666 SO-DIMM, 4GB (default) up to 32GB
Storage	1 x 2.5" SATA 3.0 SSD (9.5mm)	1 x 2.5" SATA 3.0 SSD (9.5mm)	1 x 2.5" SATA 3.0 SSD (9.5mm)	1 x 2.5" SATA 3.0 SSD (9.5mm)
Second Storage	1 x mSATA (occupied mPCIe socket)	1 x mSATA (occupied mini-PCIe socket)	1 x M.2 2280 Key M NVMe SSD (SATA 3.0)	1 x M.2 2280 Key M NVMe SSD (SATA 3.0)
Video Out	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI
Audio	1 x Mic-in, 1 x Line-out (M12)	1 x Mic-in, 1 x Line-out (DB9)	1 x Mic-in, 1 x Line-out (DB9)	1 x Mic-in, 1 x Line-out (DB9)
Ethernet	1 x Intel® 10/100/1000 (M12)	2 x Intel® 10/100/1000/2500 (M12)	1 x 10/100/1000/2500 1 x Intel® 10/100/1000 (M12)	1 x 10/100/1000/2500 1 x Intel® 10/100/1000 (M12)
PoE	N/A	N/A	N/A	2 x M12 independent Intel® 10/100/1000/2500 (802.3af/at). Total 60W
USB	2 x USB 3.2 (Gen1)	2 x USB 3.2 (Gen2)	1 x M12 with 2 x USB 2.0 signal, 1 x USB 2.0, 1 x USB 3.2 (Gen 2)	1 x M12 with 2 x USB 2.0 signal, 1 x USB 2.0, 1 x USB 3.2 (Gen 2)
COM	5 x RS232 (Tx, Rx), 2 x RS485	2 x RS232 (full)/422/485	1 x RS232 (full)/422/485, 1 x RS232 (Tx, Rx), 2 x RS485	1 x RS232 (full)/422/485, 1 x RS232 (Tx, Rx), 2 x RS485
DIO	5 x Programmable DIO	5 x DI, 4 x DO	5 x DI, 4 x DO	5 x DI, 4 x DO
CAN	1 x CANBus 2.0B	1 x CAN Bus 2.0B	1 x CAN Bus 2.0B	1 x CAN Bus 2.0B
DC Output	12V (2A)	12V (2A)	12V (2A)	12V (2A)
SMBus	1	N/A	N/A	N/A
SIM Socket	1	2	2	2
WWAN	1	1	1	1
mini-PCIe Socket	- 1 x (USB 2.0, PCIe 2.0/SATA 3.0) - 1 x (USB 2.0) for LTE	- 1 x (USB 2.0, PCIe 3.0/SATA 3.0)	- 1 x (USB 2.0, PCIe 3.0). BOM option to 1 x M.2 3042 Key B socket (USB 2.0, USB 3.2 (Gen 2)) for LTE/5G NR	- 1 x (USB 2.0, PCIe 3.0). BOM option to 1 x M.2 3042 Key B socket (USB 2.0, USB 3.2 (Gen 2)) for LTE/5G NR
M.2 Socket	N/A	1 x M.2 3042/3050/3052 Key B (USB 2.0, USB 3.2 (Gen 2)) for LTE/5G 1 x M.2 2230 Key E (USB 2.0, PCIe 3.0, PCIe 3.0)	1 x M.2 3042/3050/3052 Key B (USB 2.0, USB 3.2 (Gen 2)) for LTE/5G 1 x M.2 2230 Key E (USB 2.0, PCIe 3.0, PCIe 3.0). BOM option to 1 x M.2 2230 Key E (USB 2.0, PCIe 3.0 x2)	1 x M.2 3042/3050/3052 Key B (USB 2.0, USB 3.2 (Gen 2)) for LTE/5G 1 x M.2 2230 Key E (USB 2.0, PCIe 3.0, PCIe 3.0). BOM option to 1 x M.2 2230 Key E (USB 2.0, PCIe 3.0 x2)
GNSS	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-06 module (u-blox NEO-M9N)	VIOB-GPS-06 module (u-blox NEO-M9N)	VIOB-GPS-06 module (u-blox NEO-M9N)
Power Input	DC 24V (w/o isolation)	DC 24V (w/o isolation)	DC 24V (w/o isolation)	DC 24V (w/o isolation)
Ignition Control	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Power Management	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
Ingress Protection	N/A	N/A	N/A	N/A
Certification	CE, FCC Class A, UKCA, EN50155	CE, FCC Class A, UKCA, EN50155	CE, FCC Class A, UKCA, EN50155	CE, FCC Class A, UKCA, EN50155
OS	Win 10 64-bit, Linux (Kernel 4.x)	Win 10/11 64-bit, Linux (Kernel 5.x)	Win 10/11 64-bit, Linux (Kernel 5.x)	Win 10/11 64-bit, Linux (Kernel 5.x)
Dimensions (mm)	185 x 120 x 45	185 x 120 x 50	180 x 180 x 60	180 x 180 x 60
Operating Temperature	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)

				
VTC 1911-IPK	VTC 6210-R	nROK 6221	nROK 6221-IP	nROK 6222-AC4S
Intel Atom® E3815, 1 Core, 1.46GHz N/A	Intel Atom® E3845, 4 Core, 1.91GHz N/A	Intel Atom® x7-E3950, 4 Core, 2.0GHz N/A	Intel Atom® x7-E3950, 4 Core, 2.0GHz N/A	Intel Atom® x7-E3950, 4 Core, 2.0GHz N/A
1 x DDR3L 1600 SO-DIMM, 2GB (default) up to 8GB	1 x DDR3L 1600 SO-DIMM, 2GB (default) up to 8GB	1 x DDR3L 1600 SO-DIMM, 4GB (default) up to 8GB	1 x DDR3L 1866 SO-DIMM, 4GB (default) up to 8GB	1 x DDR3L 1866 SO-DIMM, 4GB (default) up to 8GB
1 x mSATA	1 x 2.5" SATA 2.0 SSD (removable, 9.5mm)	1 x 2.5" SATA 3.0 SSD (removable, 15mm)	1 x 2.5" SATA 3.0 SSD (removable, 15mm)	2 x 2.5" SATA 3.0 SSD (removable, 15mm)
1 x 2.5" SATA 3.0 SSD (9.5mm) or 1 x SATA DOM	1 x CFast (external accessible)	1 x CFast (external accessible, default) or 1 x mSATA (occupied CFast, BOM optional)	1 x CFast (external accessible, default) or 1 x mSATA (occupied CFast, BOM optional)	1 x SD (external accessible), 1 x internal USB DOM
1 x VGA. 1 x HDMI (optional)	1 x VGA, 1 x DP	2 x VGA, 1 x HDMI	2 x VGA	1 x VGA, 2 x HDMI
1 x Mic-in, 1 x Line-out (DB15)	2 x Mic-in, 2 x Line-out (Phone Jack)	1 x Mic-in, 2 x Line-out (DB9)	1 x Mic-in, 1 x Line-out (M8)	1 x Mic-in, 1 x Line-out (M8)
2 x Intel® 10/100/1000 (M12)	2 x Intel® 10/100/1000 (M12)	2 x Intel® 10/100/1000 (M12). (additional 1 x Intel® 10/100/1000 (M12), BOM optional)	2 x Intel® 10/100/1000 (M12). (additional 1 x Intel® 10/100/1000 (M12), BOM optional)	1 x Intel® 10/100/1000 (M12)
N/A	N/A	N/A	N/A	4 x M12 Intel® 10/100/1000 (802.3af/at). Total 60W
1 x USB 2.0	1 x M12 with 2 x USB 2.0 signal, 1 x USB 3.2 (Gen1)	1 x M12 with 2 x USB 2.0 signal, 1 x USB 2.0, 1 x USB 3.2 (Gen1)	1 x M12 with 2 x USB 2.0 signal, 1 x USB 3.2 (Gen1)	1 x M12 with 2 x USB 2.0 signal, 1 x USB 3.2 (Gen1)
2 x RS232 (Tx, Rx), 1 x RS485	2 x RS232 (full), 1 x RS422/485. (w/ isolation)	1 x RS232 (full), 1 x RS232 (Tx, Rx), 1 x RS485. (w/ isolation)	1 x RS232 (full), 1 x RS232 (Tx, Rx), 1 x RS485. (w/ isolation)	1 x RS232 (full), 1 x RS232 (Tx, Rx), 1 x RS422/485. (w/ isolation)
3 x DI, 3 x DO	4 x DI, 4 x DO (w/ isolation)	4 x DI, 4 x DO (w/ isolation)	4 x DI, 4 x DO (w/ isolation)	4 x DI, 4 x DO (w/ isolation)
1 x CANBus 2.0B	1 x CANBus 2.0B	1 x CANBus 2.0B (w/ isolation)	1 x CANBus 2.0B (w/ isolation)	1 x CANBus 2.0B (w/ isolation)
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
2	3	6 (BOM option up to 8, eSIM BOM optional)	6 (BOM option up to 8, eSIM BOM optional)	2 (eSIM BOM optional)
1	2	3 (BOM option up to 4)	3 (BOM option up to 4)	1
- 1 x (USB 2.0, PCIe2.0/SATA 2.0) - 1 x (USB 2.0) for LTE	- 1 x (USB 2.0, PCIe 2.0) - 1 x (USB 2.0, PCIe 2.0) for LTE - 1 x (USB 2.0) for LTE	- 1 x (USB 2.0, PCIe 2.0) - 1 x (USB 2.0, PCIe 2.0). BOM option to 1 x mini-PCIe (USB 2.0) for LTE - 1 x (USB 2.0) for LTE	- 1 x (USB 2.0, PCIe 2.0) - 1 x (USB 2.0, PCIe 2.0). BOM option to 1 x mini-PCIe (USB 2.0) for LTE - 1 x (USB 2.0) for LTE	- 2 x (USB 2.0, PCIe 2.0) - 1 x (USB 2.0) for LTE. BOM option to 1 x M.2 3042 Key B (USB 2.0, USB 3.2 (Gen1)) for LTE/5G
N/A	N/A	1 x M.2 3042 Key B (USB 2.0, USB 3.2 (Gen 1)) for LTE/5G 1 x M.2 3042/3050/3052 Key B (USB 2.0, USB 3.2 (Gen 1)) for LTE/5G	1 x M.2 3042 Key B (USB 2.0, USB 3.2 (Gen 1)) for LTE/5G 1 x M.2 3042/3050/3052 Key B (USB 2.0, USB 3.2 (Gen 1)) for LTE/5G	1 x M.2 3042 Key B (USB 2.0, USB 3.2 (Gen 1)) for LTE/5G (BOM optional)
Onboard u-blox NEO-M8N	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	u-blox NEO-M8N onboard
DC 9V to 36V	DC 24/36V (w/o isolation), 110V (w/ isolation)	DC 24/36V (w/o isolation), DC 24/110V (w/ isolation, optional)	DC 24 (w/ isolation), DC 24/36V (w/o isolation, optional), DC 110V (w/ isolation, optional)	DC 24/36V (w/o isolation), DC 24/110V (w/ isolation, optional), external power kit, optional
Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
IP67	N/A	N/A	N/A	N/A
CE, FCC Class A, UKCA, E13, EN50155	CE, FCC Class A, UKCA, EN50155	CE, FCC Class A, UKCA, EN50155	CE, FCC Class A, UKCA, EN50155	CE, FCC Class A, UKCA, EN50155
Win 10, Win 8, Win 7, WES 7, Linux (Kernel 4.x)	Win 10, Win 8, Win 7, WES 7, Linux (Kernel 4.x)	Win 10 64-bit, Linux (Kernel 4.x)	Win 10 64-bit, Linux (Kernel 4.x)	Win 10 64-bit, Linux (Kernel 4.x)
185 x 167 x 56.5	260 x 176 x 70	260 x 196 x 70	260 x 198 x 70	260 x 196 x 66.5
-40°C to 70°C (OT4)	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)

Railway Computer - Box PC

Model			
	nROK 7251-7A	nROK 7251-7C4	nROK 7251-WI-7C4IP
CPU	Intel® Core™ i7-9700TE, 8 Core, 3.8GHz	Intel® Core™ i7-9700TE, 8 Core, 3.8GHz	Intel® Core™ i7-9700TE, 8 Core, 3.8GHz
Chipset	Intel® Q370	Intel® Q370	Intel® Q370
Memory	2 x DDR4 2666 SO-DIMM, 4GB + 4GB (default) up to 64GB	2 x DDR4 2666 SO-DIMM, 4GB + 4GB (default) up to 64GB	2 x DDR4 2666 SO-DIMM, 8GB (default) up to 64GB
Storage	2 x 2.5" SATA 3.0 SSD (removable, 15mmn)	2 x 2.5" SATA 3.0 SSD (removable, 15mmn)	2 x 2.5" SATA 3.0 SSD (removable, 15mmn)
Second Storage	2 x mSATA (occupied mini-PCIe socket)	2 x mSATA (occupied mini-PCIe socket)	2 x mSATA (occupied mini-PCIe socket)
Video Out	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI	1 x VGA
Audio	1 x Mic-in, 1 x Line-out (M8)	1 x Mic-in, 1 x Line-out (M8)	1 x Mic-in, 1 x Line-out (M8)
Ethernet	2 x Intel® 10/100/1000 (M12)	1 x Intel® 10/100/1000 (M12)	1 x Intel® 10/100/1000 (M12)
PoE	N/A	4 x M12 Independent Intel® 10/100/1000 (802.3af/at). Total 60W	4 x M12 Independent Intel® 10/100/1000 (802.3af/at). Total 60W
USB	1 x M12 with 2 x USB 2.0 signal, 4 x USB 3.2 (Gen2)	1 x M12 with 2 x USB 2.0 signal, 4 x USB 3.2 (Gen2)	1 x M12 with 2 x USB 2.0 signal, 4 x USB 3.2 (Gen2)
COM	2 x RS232 (Full), 1 x RS232 (Full)/422/485. (w/ isolation)	2 x RS232 (Full), 1 x RS232 (Full)/422/485. (w/ isolation)	2 x RS232 (Full), 1 x RS232 (Full)/422/485. (w/ isolation)
DIO	4 x DI, 4 x DO (w/ isolation)	4 x DI, 4 x DO (w/ isolation)	4 x DI, 4 x DO (w/ isolation)
CAN	N/A	N/A	N/A
DC Output	N/A	N/A	N/A
SMBus	N/A	N/A	N/A
SIM Socket	6 (BOM option up to 8, eSIM BOM optional)	6 (BOM option up to 8, eSIM BOM optional)	6 (BOM option up to 8, eSIM BOM optional)
WWAN	3 (BOM option up to 4)	3 (BOM option up to 4)	3 (BOM option up to 4)
mini-PCIe Socket	- 1 x (USB 2.0, PCIe 3.0/SATA 3.0) - 1 x (USB 2.0, PCIe 3.0/SATA 3.0). BOM option to 1 x mini-PCIe (USB 2.0) for LTE - 1 x (USB 2.0) for LTE. BOM option to 1 x M.2 3042 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G	- 1 x (USB 2.0, PCIe 3.0/SATA 3.0) - 1 x (USB 2.0, PCIe 3.0/SATA 3.0). BOM option to 1 x mini-PCIe (USB 2.0) for LTE - 1 x (USB 2.0) for LTE. BOM option to 1 x M.2 3042 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G	- 1 x (USB 2.0, PCIe 3.0/SATA 3.0) - 1 x (USB 2.0, PCIe 3.0/SATA 3.0). BOM option to 1 x mini-PCIe (USB 2.0) for LTE - 1 x (USB 2.0) for LTE. BOM option to 1 x M.2 3042 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G
M.2 Socket	2 x M.2 3042/3050/3052 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G	2 x M.2 3042/3050/3052 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G	2 x M.2 3042/3050/3052 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G
GNSS	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)
Power Input	DC 24V (w/o isolation)	DC 24V (w/o isolation)	DC 24~110V (w/ isolation)
Ignition Control	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Power Management	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
Ingress Protection	N/A	N/A	IP65
Certification	CE, FCC Class A, UKCA, EN50155	CE, FCC Class A, UKCA, EN50155	CE, FCC Class A, UKCA, EN50155
OS	Win 10/11 64-bit, Linux (Kernel 4.x)	Win 10/11 64-bit, Linux (Kernel 4.x)	Win 10/11 64-bit, Linux (Kernel 4.x)
Dimensions (mm)	260 x 256 x 84	260 x 256 x 84	260 x 256 x 110
Operating Temperature	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)

Railway Computer - Panel PC

Model	Coming soon 
	vROK 3030
CPU	Intel Atom® x6414RE, 4 Core, 1.50GHz
Chipset	N/A
Memory	1 x DDR4 2666 SO-DIMM, 4GB (default) up to 32GB
Storage	1 x mSATA (occupied mini-PCIe socket) 1 x M.2 2280 Key M NVMe SSD (PCIe 3.0 x1, SATA 3.0)
LCD Size	10.4" TFT LCD
Resolution	1024 x 768
Brightness (Typ.)	1200cd/m²
Contrast Ratio	900:1
View Angle	V: 85/85 H: 85/85
Brightness Adjustment	Auto via light sensor (BOM optional)
Touch Screen	Projected capacitive, anti-glare (BOM optional)
Speaker	N/A
Control Button	BOM optional
Video Input	4 x CVBS
Audio	1 x Line-in, 2 x Line-out (DB9)
Ethernet	2 x Intel® 10/100/1000/2500 (M12)
PoE	Optional
USB	1 x M12 with 2 x USB 2.0 signal, 1 x USB 3.2 (Gen 2)
COM	2 x RS232 (full)/422/485
DIO	4 x DI, 2 x DO (w/ isolation)
CAN	1 x CAN Bus 2.0B
SIM Socket	2
WWAN	1
mini-PCIe Socket	1 x (USB 2.0, PCIe 3.0/SATA 3.0)
M.2 Socket	1 x M.2 2230 Key E (USB 2.0, PCIe 3.0, PCIe 3.0) 1 x M.2 3042/3050/3052 Key B (USB 2.0, USB 3.2 (Gen 2)) for LTE/5G
GNSS	Optional
Power Input	DC 24/36V (w/o isolation) DC 24/110V (w/ isolation, optional)
Ignition Control	Yes, w/ 8 level delay time setting
Power Management	Low voltage protection & configuration via software
Internal Back Up Battery	N/A
Ingress Protection	N/A
Certification	CE, FCC Class A, UKCA, EN50155, EN45545-2
OS	Win 10/11 64-bit, Linux (Kernel 4.x)
Mounting	VESA 75
Dimensions (mm)	309 x 230.6 x 67.7
Operating Temperature	-30°C to 70°C (OT3)

Modular Vehicle Computer System

Model	    				
	MVS 2620-IPK	MVS 5600-3BU	MVS 5600-7BU	MVS 5600-3IPK	MVS 5600-7IPK
CPU	Intel Atom® x7-E3950, 4 Core, 2.0GHz	Intel® Core™ i3-6100U, 2 Core, 2.3GHz	Intel® Core™ i7-6600U, 2 Core, 2.6GHz	Intel® Core™ i3-6100U, 2 Core, 2.3GHz	Intel® Core™ i7-6600U, 2 Core, 2.6GHz
Chipset	N/A	N/A	N/A	N/A	N/A
Memory	1 x DDR3L 1600/1866 SO-DIMM, 4GB (default) up to 8GB	2 x DDR3L 1600/1866 SO-DIMM, 2GB (default) up to 16GB	2 x DDR3L 1600/1866 SO-DIMM, 2GB (default) up to 16GB	2 x DDR3L 1600/1866 SO-DIMM, 2GB (default) up to 16GB	2 x DDR3L 1600 SO-DIMM, 2GB (default) up to 16GB
Storage	1 x 2.5" SATA 3.0 SSD/HDD	1 x 2.5" SATA 3.0 SSD/HDD (removable, 9.5mm)	1 x 2.5" SATA 3.0 SSD/HDD (removable, 9.5mm)	1 x 2.5" SATA 3.0 SSD/HDD	1 x 2.5" SATA 3.0 SSD/HDD
Second Storage	1 x CFast (external accessible)	1 x CFast (external accessible)	1 x CFast (external accessible)	1 x CFast (external accessible)	1 x CFast (external accessible)
Video Out	1 x VGA	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI	1 x VGA	1 x VGA
Audio	1 x Mic-in, 2 x Line-out	2 x Mic-in, 2 x Line-out	2 x Mic-in, 2 x Line-out	1 x Mic-in, 2 x Line-out	1 x Mic-in, 2 x Line-out
Ethernet	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000
PoE	N/A	N/A	N/A	N/A	N/A
USB	3 x USB 2.0	4 x USB 3.2 (Gen1)	4 x USB 3.2 (Gen1)	1 x USB 3.2 (Gen1), 2 x USB 2.0	1 x USB 3.2 (Gen1), 2 x USB 2.0
COM	2 x RS232 (Full), 1 x RS232 (Tx/Rx), 2 x RS485	2 x RS232 (Full), 1 x RS232 (Full)/422/485	2 x RS232 (Full), 1 x RS232 (Full)/422/485	2 x RS232 (Full), 1 x RS232 (Tx/Rx), 2 x RS485	2 x RS232 (Full), 1 x RS232 (Tx/Rx), 2 x RS485
DIO	3 x DI (w/ isolation) 3 x DO (w/ isolation)	8 x Programmable DIO MCU: 2 x DI, 2 x DO, 1 x Speed frequency	8 x Programmable DIO MCU: 2 x DI, 2 x DO, 1 x Speed frequency	3 x DI (w/ isolation) 3 x DO (w/ isolation)	3 x DI (w/ isolation) 3 x DO (w/ isolation)
CAN	1 x CANBus 2.0B (w/ isolation)	1 x CANBus 2.0B	1 x CANBus 2.0B	1 x CANBus 2.0B (w/ isolation)	1 x CANBus 2.0B (w/ isolation)
DC Output	12V (2A)	12V (2A)	12V (2A)	12V (2A)	12V (2A)
SMBus	N/A	1	1	N/A	N/A
SIM Socket	3	3	3	3	3
WWAN	2	2	2	2	2
mini-PCIe Socket	1 x (USB 2.0, PCIe 2.0) for LTE 1 x (USB 2.0) for LTE 1 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0)	1 x (USB 2.0, PCIe 2.0) for LTE 1 x (USB 2.0) for LTE 1 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0, PCIe 2.0)	1 x (USB 2.0, PCIe 2.0) for LTE 1 x (USB 2.0) for LTE 1 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0, PCIe 2.0)	1 x (USB 2.0, PCIe 2.0) for LTE 1 x (USB 2.0) for LTE 1 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0)	1 x (USB 2.0, PCIe 2.0) for LTE 1 x (USB 2.0) for LTE 1 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0)
M.2 Socket	N/A	N/A	N/A	N/A	N/A
GNSS	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Ignition Control	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Power Management	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
Back Up Battery	N/A	Internal (optional)	Internal (optional)	N/A	N/A
Ingress Protection	IP65	N/A	N/A	IP65	IP65
Certification	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13
OS	Win 10, Linux (Kernel 4.x)	Win 10, Win 8, WES 8, Win 7, WES 7, Linux (Kernel 4.x)	Win 10, Win 8, WES 8, Win 7, WES 7, Linux (Kernel 4.x)	Win 10, Win 8, WES 8, Win 7, WES 7, Linux (Kernel 4.x)	Win 10, Win 8, WES 8, Win 7, WES 7, Linux (Kernel 4.x)
Dimensions (mm)	260 x 198 x 50	260 x 196 x 66.5	260 x 196 x 66.5	260 x 198 x 66.5	260 x 198 x 66.5
Operating Temperature	-40°C to 70°C	-30°C to 60°C (w/o internal back up battery)	-30°C to 60°C (w/o internal back up battery)	-30°C to 60°C	-30°C to 60°C

Vehicle Network Switch

Model	Coming soon 	Coming soon 	Coming soon 	Coming soon 
	VES31-4S	VES31-8S	VES31-4SR	VES31-8SR
Architecture	Unmanaged GbE switch	Unmanaged GbE switch	Unmanaged GbE switch	Unmanaged GbE switch
PoE	4 x 10/100/1000 (w/ 802.3af/at). Total 120W.	8 x 10/100/1000 (w/ 802.3af/at). Total 120W.	4 x M12 10/100/1000 (w/ 802.3af/at). Total 120W.	8 x M12 10/100/1000 (w/ 802.3af/at). Total 120W.
Ethernet	2 x 10/100/1000	2 x 10/100/1000	2 x M12 10/100/1000	2 x M12 10/100/1000
LED	1 x power indicator 4 x PoE indicator 1 x Low voltage protection indicator 8 x Active/link indicator	1 x power indicator 8 x PoE indicator 1 x Low voltage protection indicator 12 x Active/link indicator	1 x power indicator 4 x PoE indicator 1 x Low voltage protection indicator 6 x Active/link indicator	1 x power indicator 8 x PoE indicator 1 x Low voltage protection indicator 10 x Active/link indicator
Dimensions (mm)	167 x 140 x 52	167 x 140 x 52	167 x 140 x 85	167 x 140 x 85
Ignition Control	Yes	Yes	Yes	Yes
Power Management	Low voltage protection & power on/off delay time	Low voltage protection & power on/off delay time	Low voltage protection & power on/off delay time	Low voltage protection & power on/off delay time
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Certification	CE, FCC Class B, UKCA, E13	CE, FCC Class B, UKCA, E13	CE, FCC Class B, UKCA, EN50155	CE, FCC Class B, UKCA, EN50155
Operating Temperature	-40°C to 75°C	-40°C to 75°C	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)

Vehicle Mount Computer

Model				
	VMC 110/111	VMC 220-PC1	VMC 1100	VMC 2020-PC1
CPU	NXP i.MX6 Dual Lite, 2 Core, 800 MHz	NXP i.MX 8M, 4 Core, 1.3 GHz	Intel Atom® E3825, 2 Core, 1.33GHz	Intel Atom® x7-E3950, 4 Core, 2.0GHz
Chipset	N/A	N/A	N/A	N/A
Memory	1 x 2GB DDR3L onboard	1 x LPDDR4 2400 SDRAM 3GB onboard	1 x DDR3L 1600 SO-DIMM, 2GB (default) up to 8GB	1 x DDR3L 1866 SO-DIMM, 4GB (default) up to 8GB
Storage	1 x eMMC 8GB 1 x Micro SD	1 x eMMC 32GB 1 x Micro SD	1 x SATA 3.0 SATA DOM 3.0	1 x eMMC 64GB 1 x mSATA (occupied mini-PCIe socket)
LCD Size	7" TFT LCD	8" TFT LCD	7" TFT LCD	8" TFT LCD
Resolution	1024 x 600	1280 x 720	800 x 480	1280 x 720
Brightness (Typ.)	500cd/m²	1000cd/m²	400cd/m²	1000cd/m²
Contrast Ratio	800:1	1000:1	600:1	1000:1
View Angle	V: 70/75 H: 75/75	V: 85/85 H: 85/85	V: 50/70 H: 70/70	V: 85/85 H: 85/85
Brightness Adjustment	Auto via light sensor	Auto via light sensor	Auto via light sensor	Auto via light sensor
Touch Screen	4-wire resistive, anti-glare	Projected capacitive, anti-glare	4-wire resistive, anti-glare	Projected capacitive, anti-glare
Speaker	2 x Built-in speaker	2 x Built-in speaker	2 x Built-in speaker	2 x Built-in speaker
Control Button	F1~ F5 function key 1 x Power button 2 x Brightness/volume control 1 x System reset button	F1~ F4 function key 1 x Power button 2 x Brightness/volume control 1 x System reset button	F1~ F5 function key 1 x Power button 2 x Brightness/volume control 1 x System reset button	F1~ F4 function key 1 x Power button 2 x Brightness/volume control 1 x System reset button
Video Input	N/A	4 x CVBS	N/A	4 x CVBS (optional)
Audio	1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out
Ethernet	1 x Intel® 10/100/1000	1 x Intel® 10/100/1000 (M12)	1 x Intel® 10/100/1000	1 x Intel® 10/100/1000 (M12)
PoE	N/A	N/A	N/A	N/A
USB	3 x USB 2.0	3 x USB 2.0	1 x USB 3.2 (Gen1) 2 x USB 2.0	1 x USB 3.2 (Gen1) 2 x USB 2.0
COM	1 x RS232 (Full), 1 x RS232 (Tx, Rx)/485	1 x RS232 (Full), 1 x RS232 (Tx, Rx), 1 x RS232 (Tx, Rx)/RS422/RS485	1 x RS232 (Full), 1 x RS232 (Tx, Rx) or 1 x RS485	1 x RS232 (Full), 1 x RS232 (Tx, Rx), 1 x RS232 (Tx, Rx)/RS422/RS485
DIO	3 x DI, 3 x DO	1 x PWM, 1 x Direction, 2 x DI, 2 x DO	2 x PWM, 2 x AI, 2 x DI, 2 x DO	1 x PWM, 1 x Direction, 2 x DI, 2 x DO
CAN	2 x CANBus 2.0B	1 x CANBus 2.0B (w/ isolation)	1 x CANBus 2.0B	1 x CANBus 2.0B (w/ isolation)
SIM Socket	1	2	1	2
WWAN	1	1	1	1
mini-PCIe Socket	1 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0) for LTE	N/A	1 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0) for LTE	1 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0, PCIe 2.0/SATA 3.0)
M.2 Socket	N/A	1 x M.2 2230 Key E (PCIe 2.0, SDIO 3.0, UART) 1 x M.2 3042/3050/3052 Key B (USB 3.2 (Gen1)) for LTE/5G	N/A	1 x M.2 3042/3050/3052 Key B (USB2.0, USB 3.2 (Gen1)) for LTE/5G
GNSS	Onboard u-blox NEO-M8N	VIOB-GPS-02 module (u-blox NEO-M8N)	Onboard u-blox NEO-M8N	VIOB-GPS-02 module (u-blox NEO-M8N)
Power Input	DC 9V to 36V	DC 9V to 60V	DC 9V to 36V	DC 9V to 60V
Ignition Control	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Power Management	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
Internal Back Up Battery	N/A	Optional	N/A	Optional
Ingress Protection	Front panel IP54	IP65	Front panel IP54	IP65
Certification	CE, FCC Class B, UKCA, E13	CE, FCC Class B, UKCA, E13, IK08	CE, FCC Class B, UKCA, E13, SAE J1113, SAE J1455, ISO7637-2, EN 60950-1 LVD	CE, FCC Class B, UKCA, E13, IK08
OS	Android 5.1	Linux	Win 10 64-bit, Win 8, WES8, Win 7, WES 7, Linux (Kernel 4.x)	Win 10 64-bit, Linux (Kernel 4.x)
Mounting	VESA 75	VESA 75	VESA 75	VESA 75
Dimensions (mm)	213 x 145 x 40	250 x 179 x 68	213 x 145 x 50	250 x 179 x 68
Operating Temperature	-20°C to 70°C	-40°C to 70°C	-20°C to 60°C	-30°C to 60°C

			
VMC 3020	VMC 3021	VMC 4020-4A0	VMC 4020-4A1
Intel Atom® x5-E3930, 2 Core, 1.3GHz	Intel Atom® x7-E3950, 4 Core, 2.0GHz	Intel Atom® x7-E3950, 4 Core, 2.0GHz	Intel Atom® x7-E3950, 4 Core, 2.0GHz
N/A	N/A	N/A	N/A
1 x DDR3L 1866 SO-DIMM slot 4GB (default) up to 8GB	1 x DDR3L 1866 SO-DIMM slot 4GB (default) up to 8GB	1 x DDR3L 1866 SO-DIMM slot 4GB (default) up to 8GB	1 x DDR3L 1866 SO-DIMM slot 4GB (default) up to 8GB
1 x CFast 1 x 2.5" SATA 3.0 SSD bay (9.5mm)	1 x CFast 1 x 2.5" SATA 3.0 SSD bay (9.5mm)	1 x CFast 1 x 2.5" SATA 3.0 SSD bay (9.5mm)	1 x CFast 1 x 2.5" SATA 3.0 SSD bay (9.5mm)
10.4" TFT LCD	10.4" TFT LCD	12.1" TFT LCD	12.1" TFT LCD
1024 x 768	1024 x 768	1024 x 768	1024 x 768
1200cd/m²	1200cd/m²	1200cd/m²	1200cd/m²
900:1	900:1	750:1	750:1
V: 85/85 H: 85/85	V: 85/85 H: 85/85	V: 85/85 H: 85/85	V: 85/85 H: 85/85
Auto via light sensor	Auto via light sensor	Auto via light sensor	Auto via light sensor
5-wire resistive, anti-glare	5-wire resistive, anti-glare	5-wire resistive, anti-glare	5-wire resistive, anti-glare
2 x Built-in speaker	2 x Built-in speaker	2 x Built-in speaker	2 x Built-in speaker
1 x Power button 2 x Brightness control 2 x Volume control 5 x Function key 1 x Shift key	1 x Power button 2 x Brightness control 2 x Volume control 5 x Function key 1 x Shift key	1 x Power button 2 x Brightness control 2 x Volume control 5 x Function key 1 x Shift key	1 x Power button 2 x Brightness control 2 x Volume control 5 x Function key 1 x Shift key
N/A	3 x CVBS	3 x CVBS	3 x CVBS
1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out
1 x Intel® 10/100/1000	1 x Intel® 10/100/1000 (M12)	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000 (M12)
N/A	1 x (802.3af/at). Total 30W (optional)	1 x (802.3af/at). Total 30W (optional)	1 x (802.3af/at). Total 30W (optional)
2 x USB 2.0 (5V/1.0A) 1 x Power USB (5V/1.5A, 12V/1.5A)	2 x USB 2.0	2 x USB 2.0	2 x USB 2.0
2 x Powered RS232 (Full, 5V/1.5A, 12V/1.5A)	1 x RS232 (Full)/422/485, 1 x RS232 (Tx, Rx)/422/485	2 x RS232 (Full)/422/485	1 x RS232 (Full)/422/485, 1 x RS232 (Tx, Rx)/422/485
2 x DI, 2 x DO	2 x DI, 2 x DO	1 x DI, 2 x DO	2 x DI, 2 x DO
1 x CANBus 2.0B (w/ isolation)	2 x CANBus 2.0B (w/ isolation)	2 x CANBus 2.0B (w/ isolation)	2 x CANBus 2.0B (w/ isolation)
1	1	2	2
1	1	1	1
1 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0) for LTE	3 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0) for LTE	3 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0) for LTE	3 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0) for LTE
1 x M.2 2230 Key E (USB 2.0, PCIe 2.0, SDIO 3.0, UART)	N/A	N/A	N/A
Optional	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)
DC 9V to 60V	DC 9V to 60V	DC 9V to 60V	DC 9V to 60V
Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
Optional	Optional	Optional	Optional
Front Panel IP65	IP65	Front IP65	IP65
CE, FCC Class B, UKCA, E13	CE, FCC Class B, UKCA, E13	CE, FCC Class B, UKCA, E13	CE, FCC Class B, UKCA, E13
Win 10 64-bit, Linux (Kernel 4.x)	Win 10 64-bit, Linux (Kernel 4.x)	Win 10 64-bit, Linux (Kernel 4.x)	Win 10 64-bit, Linux (Kernel 4.x)
VESA 75/100	VESA 75/100	VESA 75/100	VESA 75/100
290 x 230 x 68	290 x 230 x 68	340 x 262 x 75	340 x 262 x 75
-30°C to 60°C	-30°C to 60°C	-30°C to 60°C	-30°C to 60°C

Vehicle Mount Display

Model			
	VMD 1001	VMD 2000	VMD 2002
LCD Size	7" TFT LCD	8" TFT LCD	8" TFT LCD
Resolution	800 x 480	800 x 600	800 x 600
Brightness (Typ.)	500cd/m²	400cd/m²	400cd/m²
Contrast Ratio	600:1	500:1	500:1
View Angle	V: 60/60 H: 70/70	V: 50/70 H: 70/70	V: 50/70 H: 70/70
Brightness Adjustment	Auto via light sensor	Auto via light sensor	Auto via light sensor
Touch Screen	4-wire resistive, anti-glare	4-wire resistive, anti-glare	4-wire resistive, anti-glare
Speaker	2 x Built-in speaker	2 x Built-in speaker	2 x Built-in speaker
Camera	N/A	N/A	N/A
Control Button	1 x Monitor power button 2 x Brightness control 2 x Volume control	1 x Monitor power button 2 x Brightness control 2 x Volume control	1 x Monitor power button 2 x Brightness control 2 x Volume control
Video Input	VGA	Integrated LVDS CONN (LVDS, USB, 12V)	Integrated DVI CONN (VGA, USB, 12V)
Audio	1 x Line-in (lateral side) 1 x Line-out (lateral side)	1 x Line-out (lateral side) 1 x Mic-in (lateral side) 1 x Line-in (bottom side) 1 x Mic-out (bottom side)	1 x Line-out (lateral side) 1 x Mic-in (lateral side) 1 x Line-in (bottom side) 1 x Mic-out (bottom side)
USB	2 x USB 2.0	1 x USB 2.0	1 x USB 2.0
Remote Power Button	N/A	Remotely power on/off VTC, MVS & ATC	N/A
Power Input	DC 9V to 36V	DC 12V (via LVDS)	DC 9V to 36V
Ingress Protection	Front panel IP54	Front panel IP54	Front panel IP54
Certification	CE, FCC Class B, UKCA	CE, FCC Class B, UKCA	CE, FCC Class B, UKCA
Mounting	VESA 75	VESA 75	VESA 75
Dimensions (mm)	182 x 138 x 36.3	207 x 173 x 36.7	207 x 173 x 36.7
Operating Temperature	-20°C to 70°C	-20°C to 60°C	-20°C to 60°C

		
VMD 2003	VMD 3002-BS2	VMD 3110
8" TFT LCD	10.4" TFT LCD	10.4" TFT LCD
800 x 600	1024 x 768	1024 x 768
1000cd/m²	1200cd/m²	1200cd/m²
500:1	900:1	900:1
V: 60/60 H: 70/70	V: 85/85 H: 85/85	V: 85/85 H: 85/85
Auto via light sensor	Auto via light sensor	Auto via light sensor
4-wire resistive, anti-glare	Projected capacitive	Projected capacitive
2 x Built-in speaker	2 x Built-in speaker	2 x Built-in speaker
N/A	N/A	N/A
1 x Monitor power button 2 x Brightness control 2 x Volume control	1 x Monitor power button 1 x OSD menu 2 x Brightness control 2 x Volume control 1 x Auto config	1 x Monitor power button 1 x OSD menu 2 x Brightness control 2 x Volume control 1 x Auto config
ultraONE+, 4 x CVBS	VGA, 4 x CVBS	ultraONE+, 4 x CVBS
1 x Line-out (lateral side) 1 x Mic-in (lateral side)	1 x Line-in	1 x Line-in
1 x USB 2.0	1 x USB 2.0	1 x USB 2.0
Remotely power on/off VTC, MVS & ATC	N/A	Remotely power off VTC, MVS & ATC
DC 24V (via ultraONE+)	DC 9V to 36V	DC 24V (via ultraONE+)
Front panel IP54	IP65	IP65
CE, FCC Class B, UKCA	CE, FCC Class B, UKCA	CE, FCC Class B, UKCA
VESA 75	VESA 75/100	VESA 75/100
207 x 173 x 36.7	256.5 x 202.1 x 31.5	256.5 x 202.1 x 31.5
-20°C to 60°C	-20°C to 60°C	-20°C to 60°C

Add-on Modules and Devices

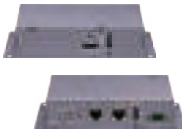
Model				
	VIOB-CAN-03	VIOB-CAN-04-RAG	VIOB-CAN-05	VIOB-CAN-06
Description	CANBus 2.0B or OBD SAE J1939 module	Dual CANBus 2.0B module	SAE J1708 module	OBD SAE J1939 module
Input I/F	UART	USB 2.0	USB 2.0	USB 2.0
Input Connector	2 x 5-pin wafer	mini-PCle Socket	mini-PCle Socket or USB wafer	mini-PCle Socket or USB wafer
Output I/F	CANBus 2.0B or OBD SAE J1939	CANBus 2.0B	SAE J1708/J1587/J1922	OBD SAE J939
Output Connector	2 x 5-pin wafer	6-pin wafer to DB9	3-pin wafer to DB9	3-pin wafer to DB9
Form Factor	Proprietary	Full-size mini-PCle	Full-size mini-PCle	Full-size mini-PCle
Dimensions (mm)	50 x 28	51 x 30	51 x 30	51 x 30
Operating Temperature	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
Remark	CANBus 2.0B & SAE J1939 election by switch	-	-	-

Model					
	VIOB-LTE-AD-03	VIOB-LTE-AD-04	VIOB-EKEY-01	VIOB-PA22-01	VIOB-AE1M-01
Description	M.2 to mini-PCle converter module	mini-PCle to M.2 converter module	mini-PCle to M.2 converter module	2 x Mic-in & 2 x Line-out module	1-port 100Mbps automotive Ethernet module
Input I/F	USB 2.0, USB 3.0	USB 2.0, USB 3.2 (Gen1)	USB 2.0, PCIe 3.0	USB 2.0	USB 2.0
Input Connector	M.2 Key B + M	mini-PCle	mini-PCle	mini-PCle Socket or USB wafer	mini-PCle or USB wafer
Output I/F	mini-PCle	M.2 3042/3050/3052 Key B	M.2 2230 Key E	Audio	1-pair UTP
Output Connector	mini-PCle (socket)	M.2 (socket)	M.2 (socket)	2 x 6-pin wafer to DB9	4 -pin wafer to DB9
Form Factor	M.2 3042/3052 Key B + M	Full-Size mini-PCle	Full-size mini-PCle	Full-size mini-PCle	Full-size mini-PCle
Dimensions (mm)	62 x 31	65 x 30	51 x 30	51 x 30	51 x 30
Operating Temperature	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
Remark	Only for LTE module	USB 3.2 (Gen1) depended by mainbord	-	-	* BroadR-reach technology

			
VIOB-GPS-02	VIOB-GPS-06	VIOB-GPS-DR04	VIOB-GPS-DR05
u-blox M8N module	u-blox M9N module	u-blox M8L module	u-blox M8U module
UART	UART	UART	UART
6-pin wafer	6-pin wafer	6-pin wafer	6-pin wafer
UART	UART	UART	UART
6-pin wafer	6-pin wafer	6-pin wafer	6-pin wafer
Proprietary	Proprietary	Proprietary	Proprietary
25.4 x 25.4	25.4 x 25.4	25.4 x 25.4	25.4 x 25.4
-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
* Baud Rate: 9600. u-blox NEO-M8N GNSS supports with GPS + QZSS, GLONASS, Galileo and BeiDou. 3 of concurrent GNSS	* Baud Rate: 38400. u-blox NEO-M9N GNSS supports with GPS + QZSS/SBAS, GLONASS, Galileo and BeiDou. 4 of concurrent GNSS	* Baud Rate: 9600. u-blox NEO-M8L-06B GNSS support with GPS, GLONASS, Galileo, BeiDou and QZSS * Automotive Dead Reckoning (ADR) * With battery	* Baud Rate: 9600. u-blox NEO-M8U-06B GNSS support with GPS, GLONASS, Galileo, and BeiDou * Untethered Dead Reckoning (UDR) * With battery

			
VIOD-10G2-SFP-01	VTK6222-APK/ VTK6222-FPK	VTK-RELAY-01	VTK-62B + VTK-62B1-BK/ VTK-62B2-BK
Dual port 10GbE module with SFP+ for aROK 5510	External attachable power isolation kit	Vehicle relay module	Smart backup battery kit
PCIe 3.0	VTK 6222-APK: 24VDC VTK 6222-FPK: 110VDC	USB 2.0 or RS-232 (Tx/Rx)	9~36VDC
PCIe 3.0 x8	M12 (5-pin)	USB type A or DB9	3-pin terminal block
Dual port SFP+, 10/1GbE	24VDC	4 x Relay 4 x DI 4 x DO 1 x Analog input 1 x Frequency input	10~12VDC (from backup battery) 9~36VDC (from vehicle battery) Communication: RS232/SMBus
2 x SFP+	M12 (5-pin)	Terminal block	Power: 3-pin terminal block Communication: 2 x 5-pin
Proprietary	Proprietary	Proprietary	Proprietary
96.7 x 181.5 x 37.4	120 (W) x 198 (D) x 50 (H)	126 (W) x 124 (D) x 24 (H)	(1) 280 (W) x 150 (D) x 42.2 (H) (2) 297.3 (W) x 175 (D) x 39 (H)
-40°C~70°C	-40°C to 70°C	-40°C to 85°C	Charging: 0°C to 45°C Discharging: 0°C to 55°C
Only for aROK 5510	Only for nROK 6222	It is remotely controlled through USB or RS-232 communication	Capacity: 8600mAh (Li-Ion) 60W ouput

HDMI Extender over IP

Model	NEW  VIP 1000-T		NEW  VIP 1000-R	
	Transmitter		Receiver	
Function	Transmitter		Receiver	
Video In	1 x FHD HDMI Type A		1 x 10/100/1000	
Video Out	1 x 10/100/1000		2 x FHD HDMI Type A	
Protocol	TCP/IP		TCP/IP	
Model	Unicast, daisy chain and multicast mode		Unicast, daisy chain and multicast mode	
USB	1 x USB 2.0 OTG		1 x USB 2.0	
Ethernet	1 x 10/100/1000		2 x 10/100/1000 LAN switch	
Power Input	DC 9V to 36V		DC 9V to 36V	
Ignition Control	Yes		Yes	
Certification	CE, FCC Class A, UKCA, E13		CE, FCC Class A, UKCA, E13	
Dimensions (mm)	130 x 100 x 31		130 x 100 x 31	
Operating Temperature	0°C to 70°C		0°C to 70°C	

About NEXCOM

Reliable Partner for the Intelligent Solutions — Committed to Customer Success

Founded in 1992 and headquartered in Taipei, Taiwan, NEXCOM is committed to being your trustworthy partner in building the intelligent solutions. To surpass customers' expectations, NEXCOM makes the difference by utilizing its decades of industrial computing experience, a highly talented R&D team, and by providing exceptional levels of customer service. With these core strengths, NEXCOM has enabled its customers to win key projects in a diverse range of industries.

With its focus on delivering these core values to better serve customers, NEXCOM integrates its capabilities and operates six global businesses, which are IoT Automation Solutions, Intelligent Video Security, Intelligent Platform @ Smart City, Mobile Computing Solutions, Medical

and Healthcare Informatics, Network and Communication Solutions. This strategic deployment enables NEXCOM to offer time-to-market, time-to-solution products and service without compromising cost.

In addition, the service-to-market business model gives NEXCOM core competence to build a strong world-class service network by providing customized service, global logistics, local access, and real-time support. Operating six subsidiaries, from China, Japan, Taiwan, the United States, to the United Kingdom, NEXCOM is able to better facilitate customers' requirements as well as closely work with global partners in different regions.

Partners should also be assured that NEXCOM's Taiwan based Headquarters and subsidiary offices in China, UK and USA have obtained ISO 9001:2008 Certification.



IAS	IoT Automation Solutions: Industrial Automation & IIoT Execution, Intelligent Edge, Gateway & EWR, Industrial Robot Control, EtherCAT Motion Solutions, Wireless & Embedded Solutions for Industrial IIoT
IDS	Intelligent Video Surveillance: IP Video Surveillance Cameras, Mobile Cameras, ANPR/LPR Network Cameras, Panoramic Cameras, NVR Server Platform
IPS	Intelligent Platform @ Smart City: Smart City, Smart Retail, Digital Signage, Interactive Kiosks, Hospitality, Gateway, AI Edge and ODM Customization Services
MCS	Mobile Computing Solutions: Rugged Vehicular Computers and Equipment, Vehicular Telematics Computers, Railway Computers, In-Vehicle AI
MHI	Medical and Healthcare Informatics: Total Solutions with a Variety of Medical IT Systems
NCS	Network and Communication Solutions: Network Security, HPC, Telecommunications, Storage, SDN/NFV, Industrial Security

Corporate Vision

To become the industrial leader in providing intelligent solutions, NEXCOM utilizes its industry leading technology, localized customer support and worldwide logistics services. This will be achieved by:

- Great team work
- Cooperation with trusted partners
- Growth through innovation

Corporate Mission

- An innovative supplier in vertical application markets
- A quality partner in engineering, manufacturing and services

Business Strategy

Aim to better support the activities of all its partners, NEXCOM divides its sales force into eight dedicated business units to target rapidly expanding vertical markets. This enhances each business unit concentrating on strategic channel accounts and on repeat order business. Moreover, NEXCOM's business units have been set up to serve the requirements of key project accounts, where product ODM and project support are frequently required.

NEXCOM is working with embedded computing solution providers to envision new opportunities for growth. We'll help you deliver reliable vertical solutions, optimized for the next wave of IIoT and Industry 4.0 solutions.

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