



Committed to Customer Success

Always
Moving Forward



2023 Mobile Computing Solutions Product Selection Guide

www.nexcom.com



About NEXCOM Mobile Computing Solutions

Founded in 1992, NEXCOM is committed to being your trustworthy partner in building the intelligent business. NEXCOM makes the difference by utilizing its industrial computing experience, a highly talented R&D team, strong world-class ODM services, and rapid support to customers. NEXCOM has worldwide customers from more than 50 countries and we never stop growth with our business partners.. As we accelerate towards the future, NEXCOM has been playing an important role in bringing intelligence to transportation.

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

We focus on developing practical technologies, and constant growth brings us many advantages in the automotive sphere:

- Superior power designed for uninterrupted operations
- Smart and effective patented designs, resistant to very extreme environments
- Various communication module options (LoRa, V2X, NB-IoT, LTE, 5G NR, Wi-Fi 6/6E)

- Modular designs for the ease of maintenance
- Customized firmware and specialized ODM hardware solutions

NEXCOM has the passion, hope and dedication to keep moving forward making daily lives better through innovation. NEXCOM is forging ahead into the future and making it a success with our business partners!

Always Moving Forward



Our Core Competencies -

Building a Foundation for Interconnected IoV and Value-Added Innovation



Vehicle Mount Computer
VMC 2020



Railway Computer
aROK 5510



Railway Computer
aROK 8110

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



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.)

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)



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

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



Core Competency : Premium Design

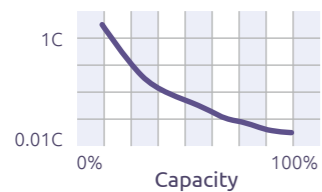
For Rugged Devices and Vehicle/Railway Computers



Uninterrupted Power Means Uninterrupted Operations

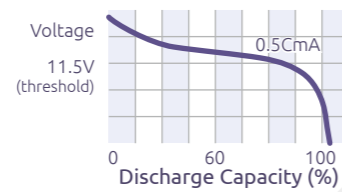
Quantization for Auto C-rate Charge

- 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

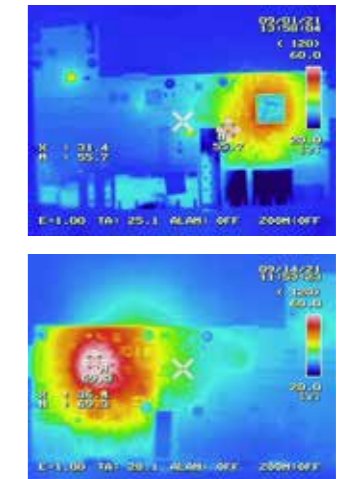
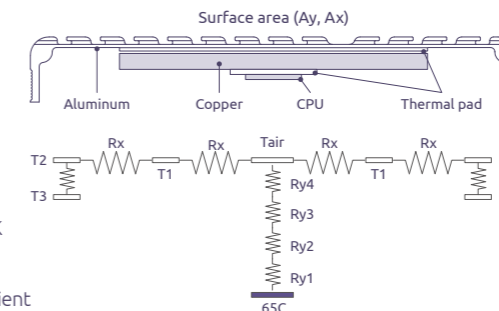


Smart and Effective Cooling System

Thermal Model Created and Thermal Dynamic Simulation

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

R_y (Heat resistor)= L/K
 A_y (Surface area on y-axis)
 A_x (surface area on x-axis)
 K (Aluminum): $170W/m^2K$
 K (Copper): $380W/m^2K$
 K (Thermal pad): $6\sim 15W/m^2K$
 K (air): $0.026W/m^2K$
 $T1/T2/T3$: temperature gradient



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



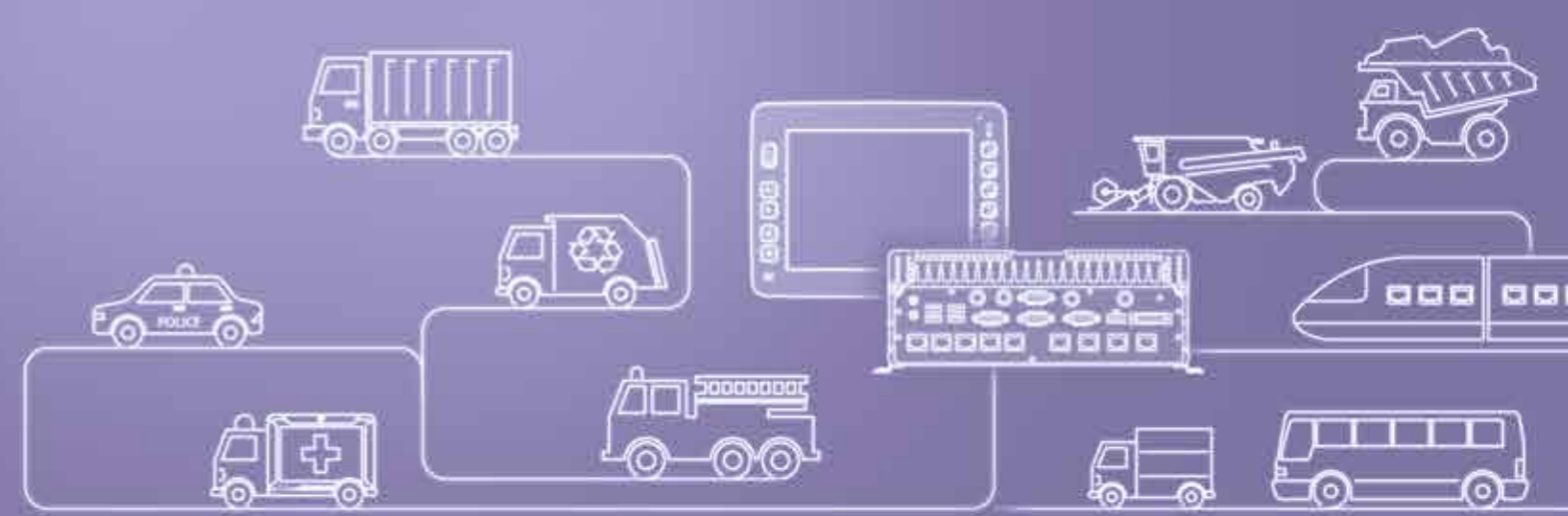
Industrial Touch Panel Protection

- 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, $-40\sim 70^{\circ}C$



Core Competency : Premium Design

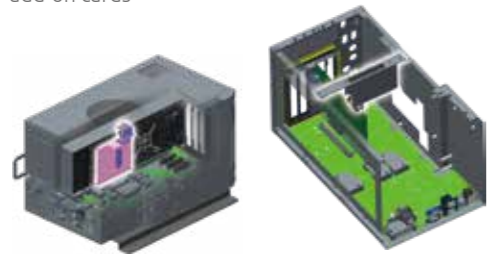
For Rugged Devices and Vehicle/Railway Computers



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 1x SDI, 1x HDMI, 1x DVI-I, 1x YPbPr
 - Video format for 3G-SDI, HD-SDI, SD-SDI
- SD capture solution
 - Video input for CVBS
 - Video format for NTSC, PAL

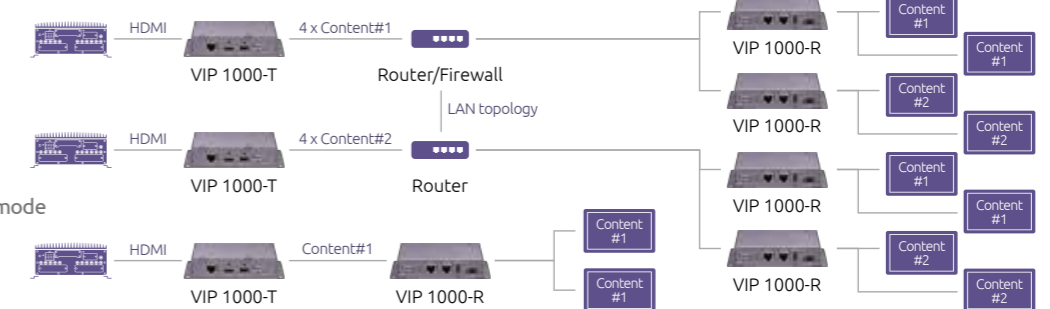


Infotainment/PIS Solutions for In-vehicle and Train

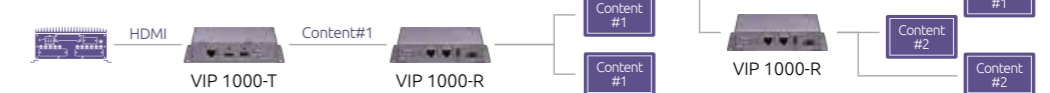
Transmit Video & Audio over Ethernet up to 100m

- 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

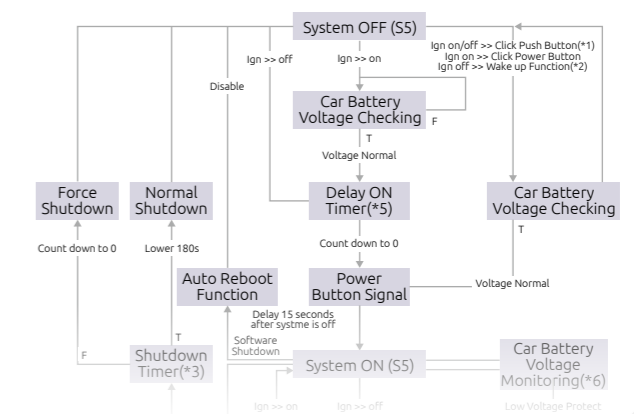


Unicast mode



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



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
- 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
- Backup battery kit



nROK/aROK/vROK Series

Railway Computer

- Box/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
- 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 re-spins 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/10G LAN and RTSP Solutions

- Extends Full HD HDMI over IP for Passenger Infotainment Systems
- Design for video surveillance and AI video analytics applications
- Comply with 802.3af/at with RJ45 or M12 connector (D, X-coded)
- Mobile PoE switch and 10G PoE cards



Premium Solutions




- IP65/IP67 protection against water and dust
- IK Ratings protection provided by panel PC against external mechanical impacts to display
- Performing conformal coating protection against moisture, dust and chemicals



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

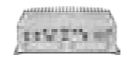
First Response
AI for ANPR & Facial Recognition



AI Edge Computing
AI Vision for Inspection/People Counting



AI Edge Computing
Autonomous Driving/ADAS



Smart Public Transit
Infotainment & PIS



Smart Public Transit
Infotainment & PIS




Smart Public Transit
Intelligent Video Surveillance



Smart Public Transit
Infotainment & PIS



AI Edge Computing
AI Traffic Control & Management



Material Handling
Positioning Management



Logistics
Fleet Management



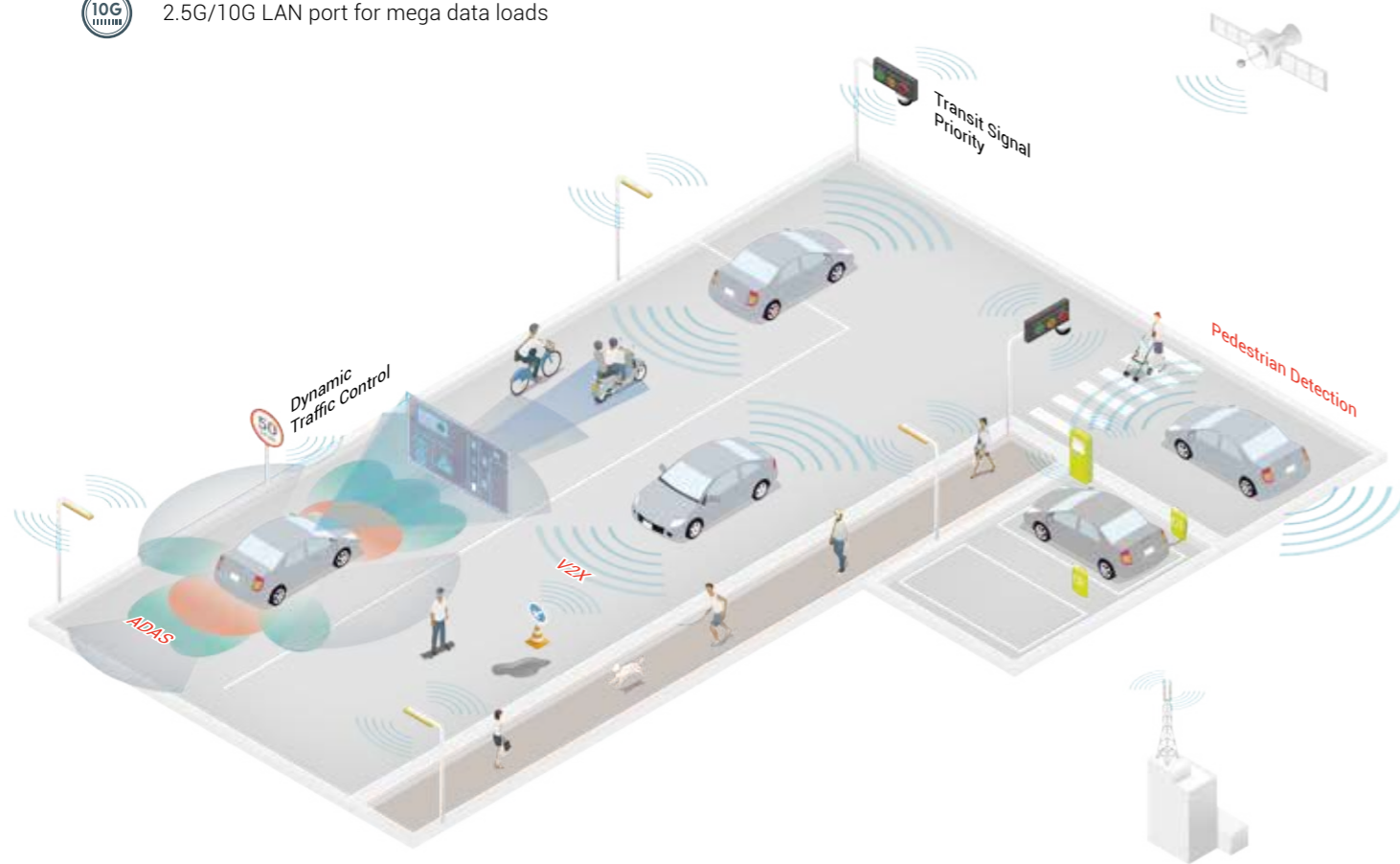
AI-Assisted Next-Generation Driving

Deep Learning Makes the Next-Generation Driving Perceptive and Practical



NEXCOM's Solutions

- Wide selection of GPU from NVIDIA, Google Coral, to Hailo-8
- PoE, DIO, USB, RS232/422/485 for external peripherals
- 2.5G/10G LAN port for mega data loads
- GNSS and WWAN for accurate positioning and communication
- Compliant to E-Mark, IP-grade, MIL-STD-810F for rugged environments



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 7260-7C4
 Fanless AI-aided Vehicle Computer with 11th Gen Intel® Core™ CPU

- Support M.2 Hailo AI card
- Support 4-port 2.5GbE POE+

ADAS, Autonomous Driving, AMR Application Highlights

- High computing requirements for AI recognition
- Connectivity for diverse peripherals: MIPI, IP/GigE cam, LiDAR, radar
- Low-latency signal transmission and rapid cloud computing access
- Precise tracking/positioning
- Rugged design with add-on, built-in GPU module or SoM



ATC 8010
 AI Inference, In-Vehicle, Fanless Computer with Intel® Core™ 8th Gen. CPU

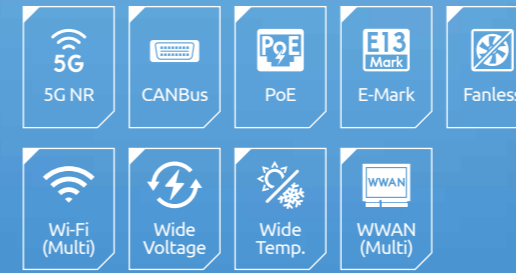
- Support NVIDIA® MXM GPU (Turing and Ampere-based Quadro)
- Up to 8 independent GbE PoE+

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

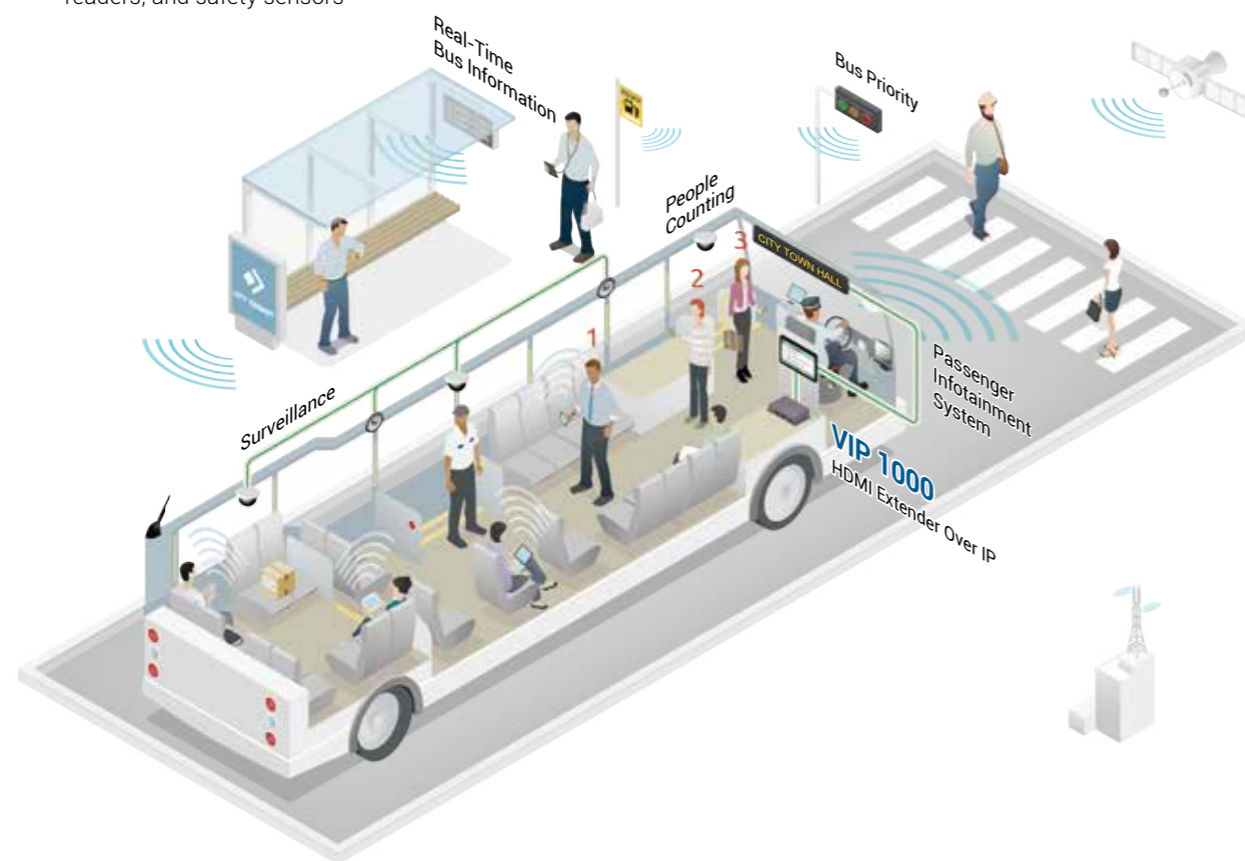
Smart Public Bus Transit

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



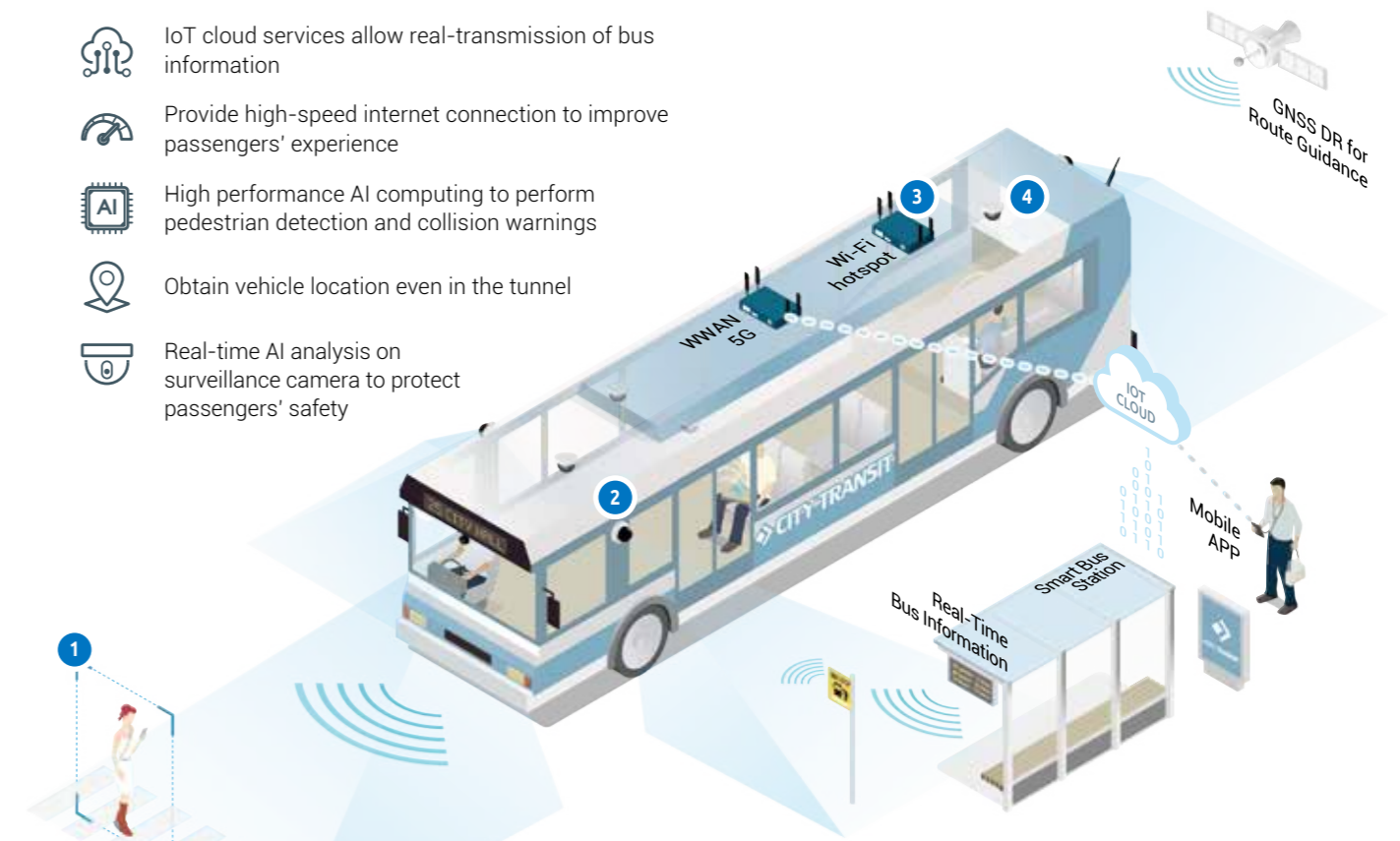
NEXCOM's Solutions

- PC-based in-vehicle NVRs for real-time surveillance
- Built-in GNSS with dead reckoning function for accurate positioning
- Built-in communication port for signage, card readers, and safety sensors
- Support multiple Wi-Fi and cellular modules for uninterrupted internet connection
- In-vehicle HDMI extender over IP for PIS and infotainment



eBus Application Highlights

- IoT cloud services allow real-transmission of bus information
- Provide high-speed internet connection to improve passengers' experience
- High performance AI computing to perform pedestrian detection and collision warnings
- Obtain vehicle location even in the tunnel
- Real-time AI analysis on surveillance camera to protect passengers' safety



1 Pedestrian detection 2 Blind spot camera for safety 3 Wi-Fi hot spot 4 NVR for surveillance

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

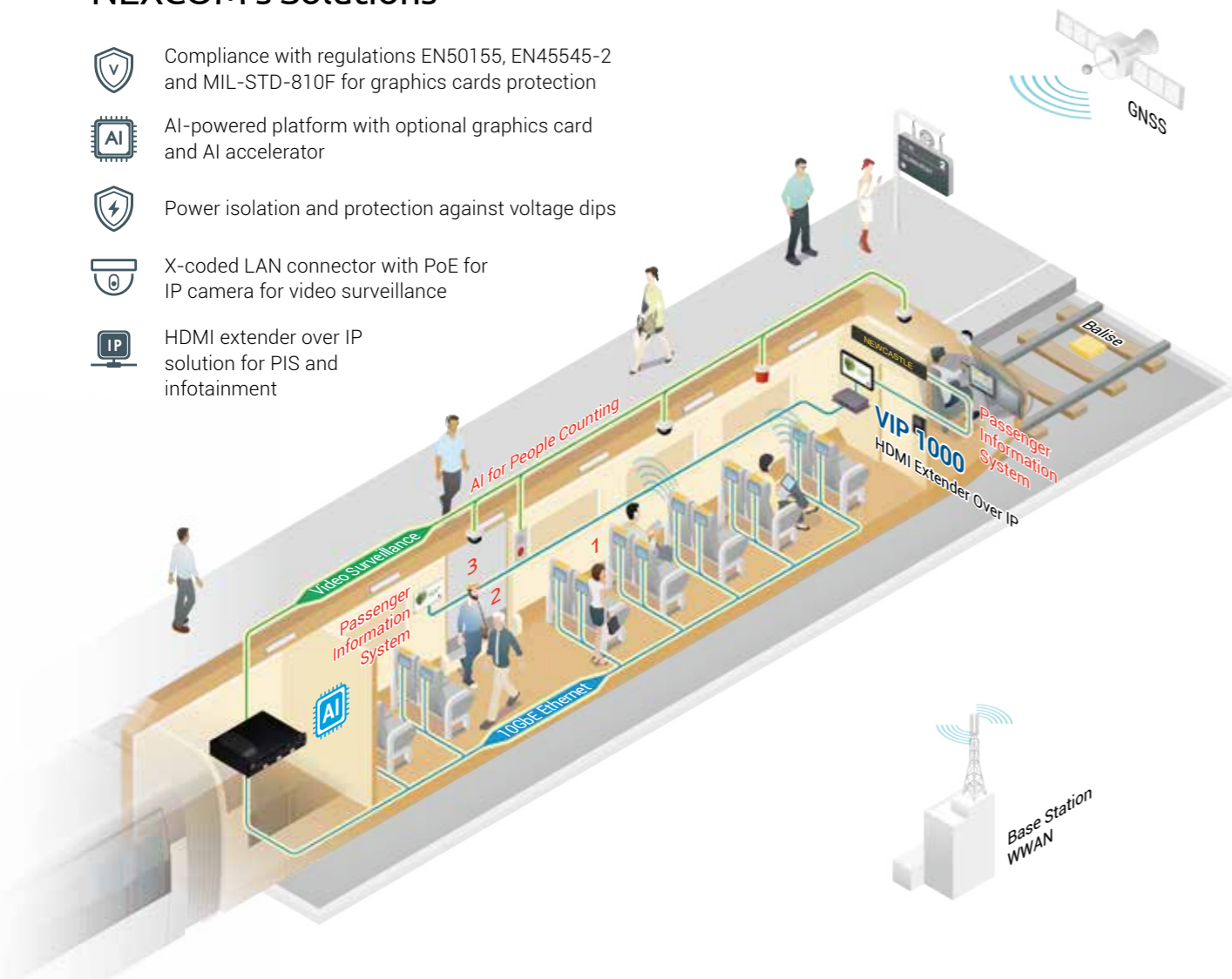
Smart Public Rail Transit

Telematics for Transportation Security and Efficiency, Plus Passenger Satisfaction



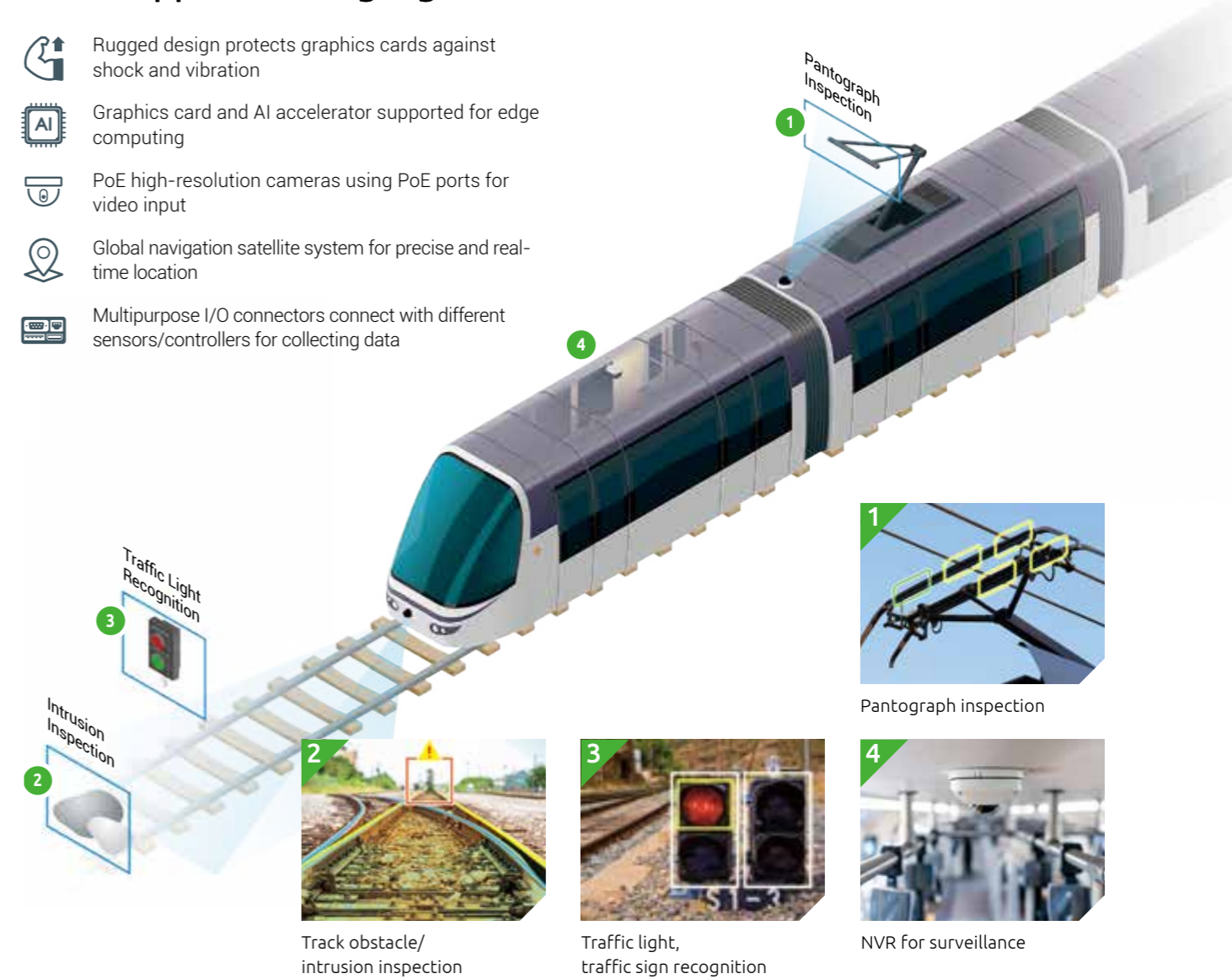
NEXCOM's Solutions

- Compliance with regulations EN50155, EN45545-2 and MIL-STD-810F for graphics cards protection
- AI-powered platform with optional graphics card and AI accelerator
- Power isolation and protection against voltage dips
- X-coded LAN connector with PoE for IP camera for video surveillance
- HDMI extender over IP solution for PIS and infotainment



Vision Application Highlights

- Rugged design protects graphics cards against shock and vibration
- Graphics card and AI accelerator supported for edge computing
- PoE high-resolution cameras using PoE ports for video input
- Global navigation satellite system for precise and real-time location
- Multipurpose I/O connectors connect with different sensors/controllers for collecting data



Recommended Models



nROK 1031/1031-C2

Fanless Rolling Stock Computer, Intel Atom® Elkhart Lake x6413E

- 5G NR and Wi-Fi 6/6E wireless communication options
- Optional AI accelerator M.2/mini-PCIe module



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



nROK 7251-7C4

Fanless Rolling Stock Computer, Intel® Core™ 9th Gen. CPU

- 4 x Independent 10/100/1000 Mbps PoE 802.3af/at, total 60W
- 2 x External SSD/HDD and 2 x mSATA for RAID 0, 1



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

- Compact, Rugged, IP65/IP67 protection for reliable operation in harsh environments
- Military standard anti-vibration/shock, extended operating temperature range, -40°C to 70°C
- Combination of GNSS and WLAN/WWAN modules for tracking and massive data communication
- Street view image recognitions through AI accelerator card
- Diverse I/O ports, USB, GbE, COM, GPIO and CANBus, connect peripherals and acquire vehicle data



AI-aided Sweeper Application Highlights

- GbE PoE ports supporting IP cameras for obstacle/potholes detection
- Precise and real-time vehicle location via AVL technologies
- Correcting and transmitting data to cloud for AI models re-training
- Vibration/shock resistance and wide-range operating temperature
- Perform Inference at the edge through AI accelerator card



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

First Response Vehicles

Trusted Crime Fighting and Emergency Services at Any Time



NEXCOM's Solutions

- Supports up to 8 IP cameras over PoE ports (IEEE 802.3 af/at)
- CANBus 2.0B communication to read vehicle status accurately and quickly
- Supports multiple AI modules for fast facial and automatic license plate recognition (ALPR)
- Supports multiple LTE & 5G carriers for stable communication between vehicle and control center
- Backup battery ensures uninterrupted system operation



Recommended Models

VTC 6222-C4S
 In-Vehicle Computer, Intel Atom® Quad Core E3950

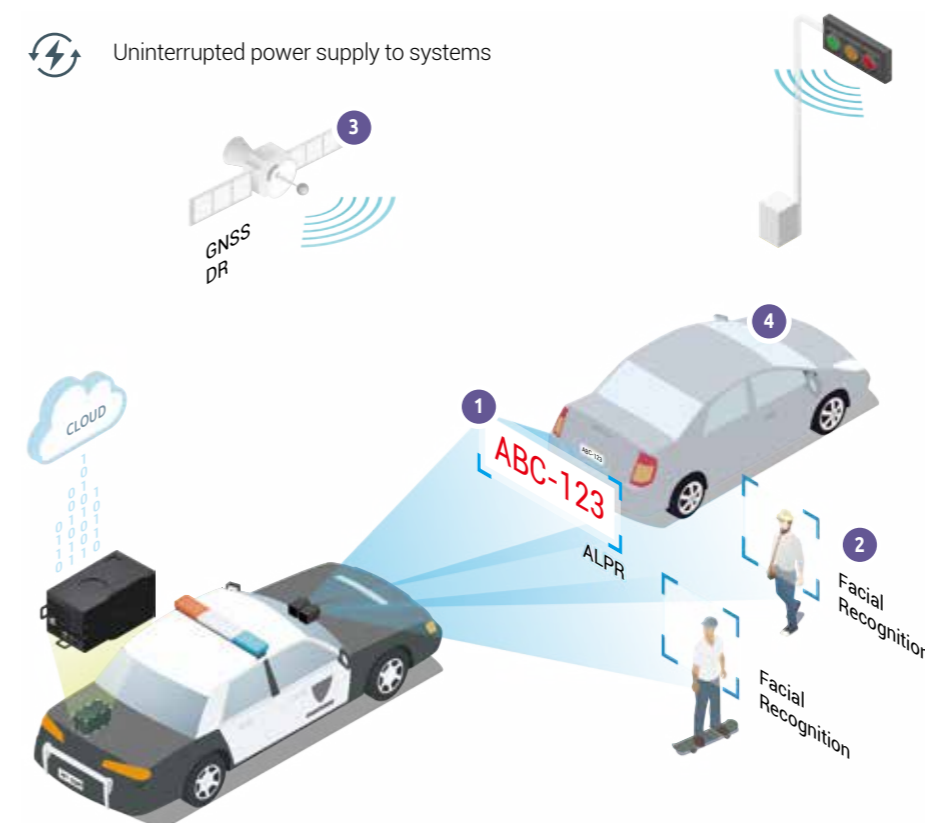
- 1 x LAN + 4 x PoE supported
- 1 x RS232 (full), 1 x RS232 (Tx/Rx), 1 x RS422/485

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 Highlights

- Ability to aggregate video feeds from multiple IP cameras
- Real-time surveillance on multiple video displays
- High AI performance for sophisticated image processing (facial recognition, ALPR)
- Quick and trusted communication with emergency and control center
- Uninterrupted power supply to systems



1 Support for speed violation detection and ANPR technologies



2 Facial recognition technology helps identify suspects



3 Rapid emergency dispatch and real-time monitoring



4 Driver seat belt and mobile phone use detections

ATC 8010
 AI Inference, In-Vehicle, Fanless Computer with Intel® Core™ 8th Gen. CPU

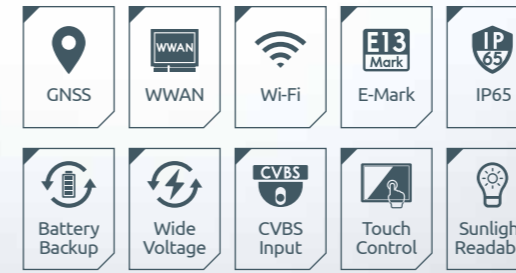
- Support NVIDIA® MXM GPU (Turing and Ampere-based Quadro)
- Up to 8 independent GbE PoE+

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

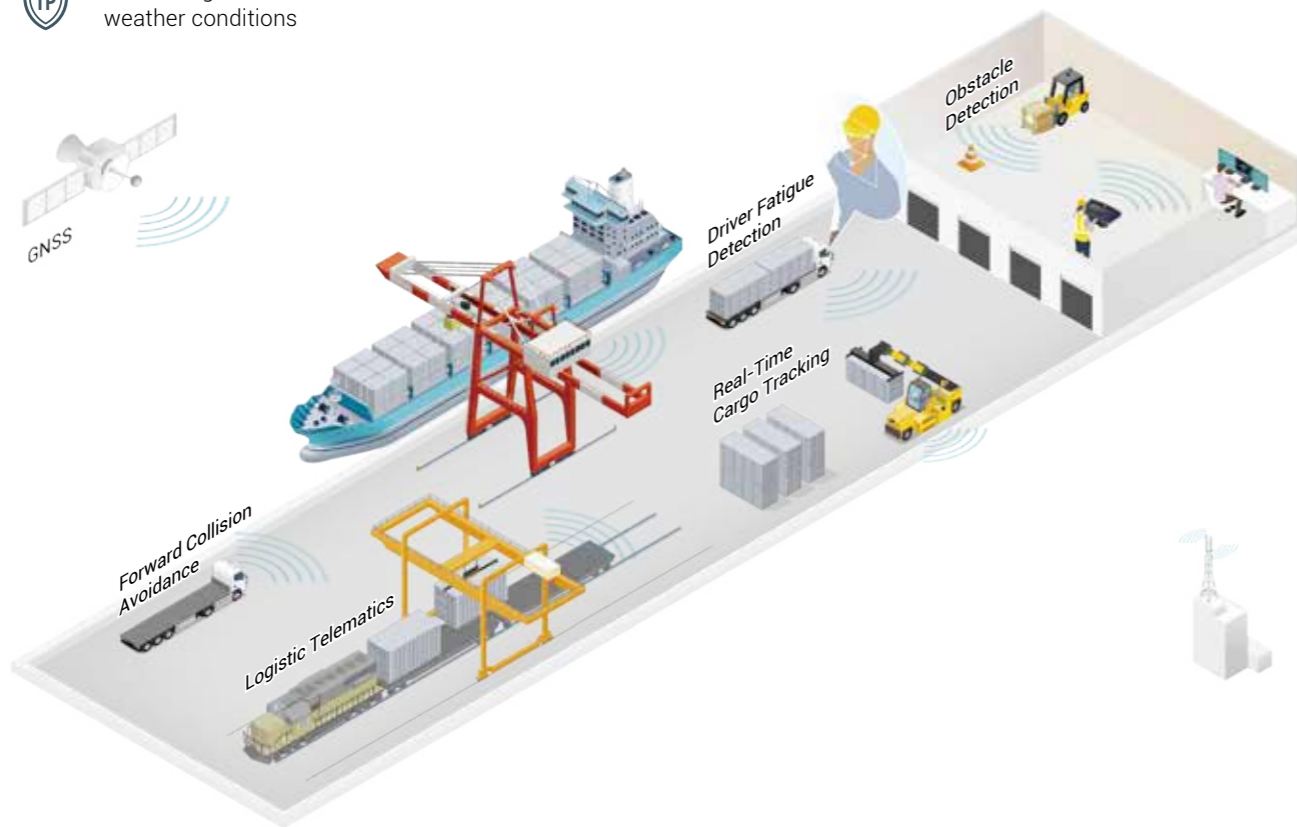
Port Management & Warehouse

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



NEXCOM's Solutions

- High-brightness LCD touchscreen panel for sunlight readability
- AI-powered edge computing platform with AI accelerator
- IP65 rating ensures that it withstands extreme weather conditions
- Wide-range power input (9~60VDC) fits different vehicles' UPS batteries
- Built-in backup battery ensures protection of mission critical to operations



Forklift Application Highlights


- IP65 rating ensures lower risk of water/dust damaging interior electronic parts
- Sunlight readability (over 1000 nits) enhances display visibility
- Ability to aggregate video feeds from multiple cameras for AI detection
- 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

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

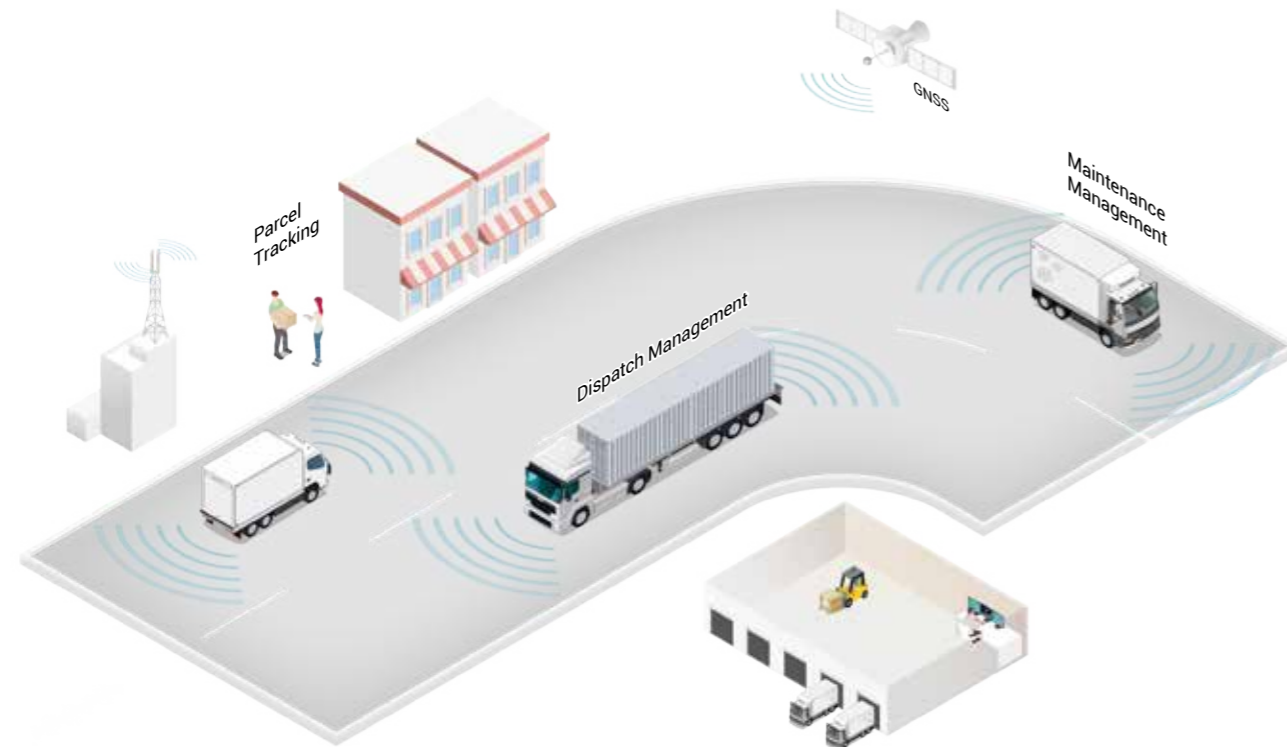
Fleet Management

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



NEXCOM's Solutions

- Combination of GNSS and WLAN/WWAN modules for tracking and massive data communication
- AI networks through AI accelerator to avoid car/pedestrian collisions
- USB, GbE, COM and CANBus for I/O peripherals
- Multi-SIM support for cross country route
- Extreme low/high temperature resistant, IP65/67 protection for harsh environments



Cold Chain Logistics Application Highlights

- Real time 5G telematics connecting all vehicles and control center
- AI analysis on surrounding images to perform ADAS and protect pedestrians' safety
- GNSS/DR precise positioning to mapping vehicles location, ensure vehicles on course/ scheduling
- Consistent monitoring of temperature and humidity sensors, accompanied by data uploads to the cloud
- CANBus retrieving ECU information, vehicles speed, fuel volume, etc., to improve better eco-driving



GNSS/DR guides route tracking



5G telematics for fleet communication



Cold chain monitoring



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

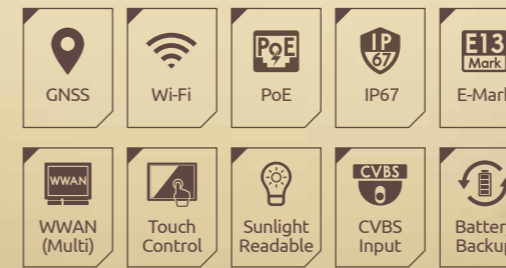


VTC 1031/1031-C2

- 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

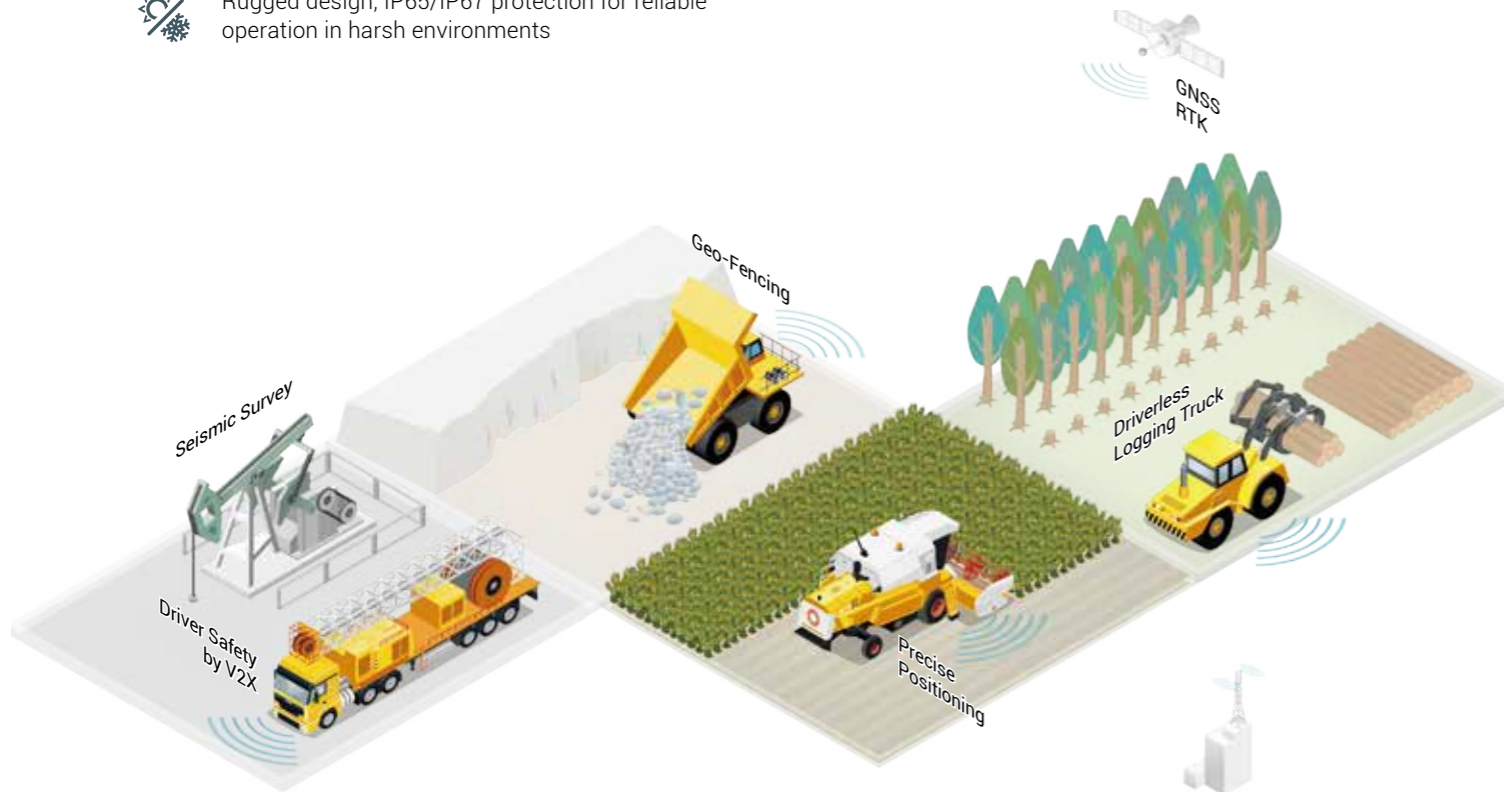
Raw Material Management

Born Tough to Increase Efficiency and Productivity



NEXCOM's Solutions

- High-brightness LCD touchscreen panel with IK09 protection
- GNSS/GPS with RTK and DR accuracy compensation for accurate vehicle positioning
- Rugged design, IP65/IP67 protection for reliable operation in harsh environments
- Rich I/O ports, USB, GbE, COM, GPIO and CANBus, connect peripherals and acquire vehicle data
- Edge AI applications, including object and driver behavior detection, prevent accidents



Mining Application Highlights

- Rugged IP65/IP67 design prevents dust and water ingress
- AI recognition to avoid car/pedestrian collisions
- GNSS RTK/DR module can track vehicles' location and prevent theft
- RFID detection can protect heavy trucks from being driven arbitrarily
- DSRC/C-V2X module can communicate among vehicles nearby, recognize signs, and predict paths; lowering collision possibilities



High-nits panel for sunlight readability



IP65/IP67 protection against rain and dust



Special system design for DSRC/C-V2X communication



PoE/MIPI cameras with AI accelerator modules improve safety



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

2023 New Products



ATC 3530-IP7-4C/-AC4R/-4M

IP67 Accelerated Edge AI In-vehicle/Railway Computer

- Built-in NVIDIA® Jetson Xavier™ NX SOM, 21 TOPS
- Support 4-port GbE PoE (ATC 3530-IP7-4C/-AC4R) and 4-ch MIPI VBO SerDes (ATC 3530-IP7-4M)
- 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



ATC 3750-6C/-A6CR

Accelerated Edge AI In-vehicle / Railway Computer

- Built-in NVIDIA® Jetson AGX Orin™ SOM, up to 200/275 TOPS (INT8) performance
- Designed with rugged, compact and hybrid thermal solutions
- 6-port GbE PoE+ for IP CAM/LiDAR sensors, optional 1-port 10GbE
- HEVC/H.265 hardware DECODE@ 6 x 4K30 performance
- E Mark and EN50155



VTC 1030

Fanless In-vehicle/Rolling Stock Computer

- Intel Atom® x6211E (Elkhart Lake) Dual Core processor, 6W
- Compact and fanless design with E Mark certification
- 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



nROK 1030-A

Fanless Rolling Stock Computer

- Intel Atom® x6211E (Elkhart Lake) Dual Core processor, 6W
- Compact and fanless design with EN50155 certification
- 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-C2

Fanless In-vehicle Telematics Computer

- Intel Atom® x6413E (Elkhart Lake) 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



nROK1031-A/-AC2

Fanless Rolling Stock Telematics Computer

- Intel Atom® 6413E (Elkhart Lake) 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-AC2)
- Optional equipped AI accelerator M.2/mini-PCIe module



VTC 7260/-C4

Fanless AI-aided Vehicle Computer

- 11th Gen Intel® Core™ i5-1145GRE/Core™ i7-1185GRE (Tiger Lake UP3)
- Compact, rugged and fanless design
- Rich I/Os, 4 x 2.5GbE PoE+ (VTC 7260-C4), 1/3 LAN, 4 x USB 3.2/2.0 & 2 x RS232/422/485
- 1 x 2.5" SSD, 1 x mSATA and 1 x NVMe SSD for data integrity
- Up to 3 combinations of LTE/5G, Wi-Fi 5/6 for mobile router function



VTC 7270/-C4/C8

Fanless AI Powered Vehicle Computer

- Powered by 12/13th Gen Intel® Core™ i with DDR5, excellent memory bandwidth, lower latency
- Rich I/Os, 1/3 LAN, 6 x USB 3.2, 2 x CAN FD & 4 x Serials
- 2 x 2.5" SSD, 1 x NVMe ultra-speed SSD for data integrity
- Support 4 x 2.5GbE PoE+ (VTC 7270-C4) and ,8 x 2.5GbE PoE+ (VTC 7270-C8)



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



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

Industrial Edge AI Telematics Computer

ATC/aROK Series Brief Product Introduction

Product Description

AI has become an essential component of automated vehicle technologies. With built-in state of the art AI accelerator, ATC and aROK series are expertise for edge AI in-vehicle/railway applications. Besides, ATC/

aROK features with extreme wide-range operating temperature, military standard anti-vibration/shock and dust/water proof IP67 rating making it constantly perform 100% workload in harsh environments.

- NVIDIA Jetson SOM, Quadro MXM/PCIe x16 AI accelerator support
- 5G/LTE, Wi-Fi 6/6E, BT, PoE, CAN function support

- EN50155 & E-MARK certification
- Optional railway isolated power input

Application

ATC: ADAS, ANPR, AMR, autonomous driving

aROK: Pantograph inspection, track obstacle inspection, traffic sign recognition

Product Highlight



Edge AI, Inference Accelerator



Sturdy System with Securing Cards/SoM for OHV and train



Strong ingress Protection, IP65/IP67







MIPI SerDes Solution Support






Model	aROK 5510	aROK 8110
System		
CPU	Intel® Coffee Lake S/ Refresh Core™/Xeon®	Intel® Coffee Lake S/ Refresh Core™/Xeon®
Chipset	Intel® C246	Intel® C246
Fan/Fanless	Fan (fan-kit pre-installed)	Fan (fan-kit pre-installed)
Memory	4 x DDR4 2666 SO-DIMM, up to 32GB + 32GB + 32GB + 32GB	2 x DDR4 2666 SO-DIMM, up to 32GB + 32GB
Storage	6 x 2.5" SATA SSD (removable, 9.5mm)	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	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/VP/TPU Coprocessor	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, 1 x HDMI	1 x VGA, 1 x HDMI
Audio	1 x Mic-in, 2 x Line-out	1 x Mic-in, 1 x Line-out
Ethernet	2 x Intel® 10/100/1000 (M12), 2 x 10GbE SFP+ card (optional)	2 x Intel® 10/100/1000 (M12)
PoE	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
I/O Interface		
USB	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 RS-232 (Full), RS232 (Full)/422/485. (w/ isolation)	4 x RS232 (Full)/422/485. (w/ isolation)
DIO	4 x DI, 4 x DO (w/ isolation)	4 x DI, 4 x DO (w/ isolation)
CAN Bus	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)
SIM Socket	8 (BOM option up to 10, eSIM BOM optional)	4 (eSIM BOM optional)
DC Output	N/A	N/A
MIPI Interface	N/A	N/A
WWAN	4 (BOM option up to 5)	2
Expansion		
mini-PCIe Socket	- 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	- 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	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)
Power Input	DC 24/110V (w/ isolation)	DC 24/36V (w/o isolation)
Environment		
Ingress Protection	N/A	N/A
Certification	CE, FCC Class A, UKCA, EN50155	CE, FCC Class A, UKCA, EN50155
Operating Temperature	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)
TPM	TPM2.0	TPM2.0
Others		
OS	Win 10/11, Linux (Kernel 4.x)	Win 10/11, Linux (Kernel 4.x)
Dimensions (mm)	483 x 400 x 95	215 x 205 x 385



Industrial Edge AI Telematics Computer

Model				
	ATC 8010	ATC 8010-F	ATC 8110	ATC 8110-F
System				
CPU	Intel® Coffee Lake S/ Refresh Core™/Xeon®	Intel® Coffee Lake S/Refresh Core™/Xeon®	Intel® Coffee Lake S/ Refresh Core™/Xeon®	Intel® Coffee Lake S/ Refresh Core™/Xeon®
Chipset Fan/Fanless	Intel® Q370 Fanless	Intel® Q370 Fan (fan-kit pre-installed)	Intel® C246 Fanless	Intel® C246 Fan (fan-kit pre-installed)
Memory	2 x DDR4 2400/2666 SO-DIMM, up to 32GB + 32GB	2 x DDR4 2400/2666 SO-DIMM, up to 32GB + 32GB	2 x DDR4 2400/2666 SO-DIMM, up to 32GB + 32GB	2 x DDR4 2400/2666 SO-DIMM, 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)	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	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
Second Storage	2 x mSATA (occupied mini-PCIe socket)	2 x mSATA (occupied mini-PCIe socket)	1 x CFast (external accessible)	1 x CFast (external accessible)
GPU/VPU/TPU Coprocessor	NVIDIA Quadro® MXM module (T1000/RTX A2000)	NVIDIA Quadro® MXM module, (RTX A4500)	One 3-slot width PCIe 3.0 x16 lane for optional NVIDIA Graphics card	One 3-slot width PCIe 3.0 x16 lane for optional NVIDIA Graphics card
Video Out	1 x VGA, * 5 x HDMI, 1 x ultraONE+	1 x VGA, * 5 x HDMI, 1 x ultraONE+	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	1 x Mic-in, 1 x Line-out	2 x Mic-in, 2 x Line-out
Ethernet	1 x Intel® 10/100/1000	1 x Intel® 10/100/1000	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000
I/O Interface				
PoE	8 x Independent Intel® 10/100/1000 (w/ 802.3at/af). Total 60W	8 x Independent Intel® 10/100/1000 (w/ 802.3at/af). Total 60W	N/A	N/A
USB	6 x USB 3.2 (Gen2)	6 x USB 3.2 (Gen2)	5 x USB 3.2 (Gen2), 1 x USB2.0	5 x USB 3.2 (Gen2), 1 x USB2.0
COM	2 x RS232 (Full), 1 x RS232 (Full)/422/485	2 x RS232 (Full), 1 x RS232 (Full)/422/485	4 x RS232 (Full)/422/485	4 x RS232 (Full)/422/485
DIO	4 x DI, 4 x DO	4 x DI, 4 x DO	4 x DI (w/ isolation) 4 x DO (w/ isolation)	4 x DI (w/ isolation) 4 x DO (w/ isolation)
CAN Bus	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)
SIM Socket	3 (eSIM BOM optional)	3 (eSIM BOM optional)	4 (eSIM BOM optional)	4 (eSIM BOM optional)
DC Output	12V (2A)	12V (2A)	12V (2A)	12V (2A)
MIPI Interface	N/A	N/A	N/A	N/A
WWAN	2	2	2	2
mini-PCIe Socket	- 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/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/SATA 3.0)	- 1 x (USB 2.0) for LTE - 1 x (USB 2.0, PCIe 2.0)	- 1 x (USB 2.0) for LTE - 1 x (USB 2.0, PCIe 2.0)
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 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
Expansion PCIe Slot	N/A	N/A	1 x PCIe x16, 1 x PCIe x4 + proprietary, 1 x PCIe x4	1 x PCIe x16, 1 x PCIe x4 + proprietary, 1 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 9V to 36V	DC 9V to 36V
Environment				
Ingress Protection	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, E13	CE, FCC Class A, UKCA, E13
Operating Temperature	-30°C to 60°C	-30°C to 60°C	-30°C to 60°C	-30°C to 60°C
TPM	TPM2.0	TPM2.0	TPM2.0	TPM2.0
Others				
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	260.0 x 259.7 x 90.1	207.4 x 176 x 350 (w/ Fan kit)	207.4 x 176 x 350 (w/ fan kit)



Model					
	ATC 3200	ATC 3530-IP7-4M	ATC 3530-IP7-4C/AC4R	ATC 3750-6C	ATC 3750-A6CR
System					
CPU	NVIDIA Tegra X2 2 Core NVIDIA Denver2 and 4 Core ARM A57	NVIDIA Jetson Xavier™ NX 3 x 2-core Carmel CPU@1.9GHz	NVIDIA Jetson Xavier™ NX 3 x 2-core Carmel CPU@1.9GHz	NVIDIA® Jetson AGX™ Orin 8-core/12-core Arm® Cortex®-A78AE 64-bit, 2.2GHz	NVIDIA® Jetson AGX™ Orin 8-core/12-core Arm® Cortex®-A78AE 64-bit, 2.2GHz
Chipset Fan/Fanless	N/A Fanless	N/A Fanless	N/A Fanless	N/A Fan/Fanless	N/A Fan/Fanless
Memory	Onboard LPDDR4 1600MHz, 8GB, 59.7GB/s	Onboard 128-bit LPDDR4, 8GB/16GB, 59.7GB/s	Onboard 128-bit LPDDR4, 8GB/16GB, 59.7GB/s	Onboard 256-bit LPDDR5, 32GB/64GB, 204.8GB/s	Onboard 256-bit LPDDR5, 32GB/64GB, 204.8GB/s
Storage	32GB Emmc 5.1	16GB eMMC 5.1	16GB eMMC 5.1	64GB eMMC 5.1	64GB eMMC 5.1
Second Storage	1 x Removable SD3.0 1 x 2.5" SATA 3.0 SSD (15mm height)	1 x Removable SD3.0 1 x M.2 2280 Key M NVMe SSD (PCIe 3.0 x4)	1 x Removable SD3.0 1 x M.2 2280 Key M NVMe SSD (PCIe 3.0 x4)	1 x Removable SD3.0 1 x M.2 2280 Key M NVMe SSD (PCIe 4.0 x4)	1 x Removable SD3.0 1 x M.2 2280 Key M NVMe SSD (PCIe 4.0 x4)
GPU/VPU/TPU Coprocessor	NVIDIA Pascal 256-core integrated GPU @1.2GHz	NVIDIA Volta 384-core, 48 tensor-core integrated GPU @1.1GHz	NVIDIA Volta 384-core, 48 Tensor-core integrated GPU @1.1GHz	NVIDIA Ampere 1792/2048-core, 56/64 Tensor-core integrated GPU @939MHz/1.3GHz	NVIDIA Ampere 1792/2048-core, 56/64 Tensor-core integrated GPU @939MHz/1.3GHz
Video Out	1 x HDMI	1 x HDMI	1 x HDMI	1 x HDMI	1 x HDMI
Audio	1 x Mic-in, 1 x Line-out	N/A	N/A	N/A	N/A
Ethernet	N/A	2 x Intel® 10/100/1000 (M12 X-coded)	1 x Intel® 10/100/1000 (M12 X-coded)	1 x 10GbE (option)	1 x 10GbE (X-coded, option)
I/O Interface					
PoE	2 x Independent Intel® 10/100/1000 (802.3af/at). Total 30W	Option for PoE (w/ 802.3af/at). Total 30W	4 x GbE (802.3at/af, M12). Total 30W	6 x GbE, (802.3af/at). Total 80W	6 x GbE, X-coded (802.3af/at). Total 80W
USB	2 x USB 3.2 (Gen1), 1 x USB 2.0, 1 x OTG	2 x USB 3.2 (Gen1), 1 x OTG	2 x USB 3.2 (Gen1), 1 x OTG	2 x USB 3.2 (Gen2), 1 x OTG	2 x USB 3.2 (Gen2), 1 x OTG
COM	2 x RS232 (Tx, Rx)/ 422/485, 1 x Console	1 x RS232 (Tx, Rx), 1 x RS232 (Tx, Rx, RTS, CTS), 1 x Console	1 x RS232 (Tx, Rx), 1 x RS232 (Tx, Rx, RTS, CTS), 1 x Console	2 x RS232 (full), 1 x Console	2 x RS232 (Full), 1 x Console
DIO	4 x DI (w/ isolation) 4 x DO (w/ isolation)	4 x DI 4 x DO	4 x DI 4 x DO	4 x DI 4 x DO	4 x DI 4 x DO
CAN Bus	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)	2 x CAN Bus 2.0B (w/ isolation)
SIM Socket	2	2	2	2	2
DC Output	12V(2A) & 5V(1A)	N/A	N/A	N/A	N/A
MIPI Interface	4 (V-by-One HS)	4 (Thine, V-by-One HS)	N/A	N/A	N/A
WWAN	1	1	1	1	1
mini-PCIe Socket	1 x (USB 2.0, PCIe 2.0)	1 x (USB 2.0, PCIe 3.0)	1 x (USB 2.0, PCIe 3.0)	1 x (USB 2.0, PCIe 4.0)	1 x (USB 2.0, PCIe 4.0)
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 3042/3052 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G - 1 x M.2 3030 Key E (PCIe 4.0, USB 2.0) for Wi-Fi 5/6	- 1 x M.2 3042/3052 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G - 1 x M.2 3030 Key E (PCIe 4.0, USB 2.0) for Wi-Fi 5/6
Expansion PCIe Slot	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-06 module (u-blox NEO-M9N)	VIOB-GPS-06 module (u-blox NEO-M9N)
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V/DC 24V railway	DC 9V to 36V	DC 9V to 36V
Environment					
Ingress Protection	IP50	IP67	IP67	IP50	IP50
Certification	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13, EN50155	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, EN50155
Operating Temperature	-30°C to 70°C	-30°C to 70°C (SoM @10W TDP)	-30°C to 70°C (SoM @10W TDP)	-20°C to 70°C (SoM @40W TDP) -20°C to 70°C (w/ fan, SoM @50W/60W TDP)	-20°C to 70°C (SoM @40W TDP) -20°C to 70°C (w/ fan, SoM @50W/60W TDP)
TPM	N/A	N/A	N/A	N/A	N/A
Others					
OS	JetPack 4.4 BSP w/ Ubuntu 18.04 (L4T)	BSP w/ JetPack 4.6, Ubuntu 18.04 @Kernel 4.9.140	BSP w/ JetPack 4.6, Ubuntu 18.04 @kernel 4.9.140	BSP w/ JetPack 5.0.2 Ubuntu 20.04 @Kernel 5.10	BSP w/ JetPack 5.0.2 Ubuntu 20.04 @Kernel 5.10
Dimensions (mm)	180 x 156 x 60	213 x 167 x 82.8	213.0 x 167.0 x 82.8	210.0 x 172.8 x 97.6 (w/ the fan kit)	210.0 x 172.8 x 97.6 (w/ the fan kit)



Based on different MXM for ATC 8010 and ATC 8010-F, the quantity will be different.



Vehicle Telematics Computer



VTC Series Brief Product Introduction

Product Description

VTC and MVS series are fanless embedded telematics system which can sustain in harsh environment, with rich I/O connectivity for external peripherals, and easy RF communication expansion. The modular design makes the

MVS series very flexible to adopt other expansion boards and thus extend I/O functions. Besides, we provide MUT (MCU Utility Tools) SDK for power management & control, which greatly reduces Time-To-Market.

-  5G/LTE, Wi-Fi 6/6E, BT,CAN/OBD module support
-  IP65/67 ingress protection

-  Ignition power management
-  AI accelerator module support

Application

- Fleet management
- Vehicle gateway
- Video surveillance
- Passenger information system
- Infotainment applications.

Product Highlight



Rugged design for harsh environment




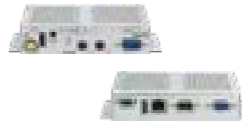

Flexible RF Communication Expansion



Dead Reckoning & RTK Precise Positioning







802.3 af/at PoE+ support




Model			
	VTC 210	VTC 1910-S	VTC 1911-IPK
System			
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, 4GB (default) up to 8GB	1 x DDR3L 1600 SO-DIMM, 4GB (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
I/O Interface			
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 Bus	N/A	1 x CAN Bus 2.0B	1 x CAN Bus 2.0B
DC Output	N/A	N/A	N/A
SIM Socket	1	2	2
Expansion			
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			
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Back Up Battery	N/A	N/A	N/A
Environment			
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
Operating Temperature	-20°C to 70°C	-40°C to 70°C	-40°C to 70°C
TPM	N/A	TPM 2.0	TPM 2.0
Others			
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



Vehicle Telematics Computer




Model				
	VTC 1011-C2K	VTC 1011-C2VK	VTC 1020	VTC 1020-PA
System				
CPU	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
Chipset	N/A	N/A	N/A	N/A
Memory	1 x DDR3L 1600 SO-DIMM, 4GB (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
Storage	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)
Second Storage	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)
Video Out	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI, 1 x ultraONE+	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI, 1 x LVDS
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, 3 x Line-out (selectable)
Ethernet	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
I/O Interface				
PoE	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
USB	2 x USB 2.0	2 x USB 2.0	2 x USB 3.2 (Gen1)	2 x USB 3.2 (Gen1)
COM	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
DIO	4 x DI, 4 x DO	4 x DI, 4 x DO	5 x Programmable DIO	5 x Programmable DIO
CAN Bus	1 x CAN Bus 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)
SIM Socket	2	2	1	1
Expansion				
WWAN	1	1	1	1
mini-PCIe Socket	- 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/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) for LTE	- 1 x (USB 2.0, PCIe 2.0/SATA 3.0) - 1 x (USB 2.0) for LTE
M.2 Socket	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)
Power				
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Back Up Battery	N/A	N/A	N/A	N/A
Environment				
Ingress Protection	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, E13	CE, FCC Class A, UKCA, E13
Operating Temperature	-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
Others				
TPM	TPM 2.0	TPM 2.0	TPM 2.0	TPM 2.0
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)	Win 10, Linux (Kernel 4.x)
Dimensions (mm)	185 x 150.9 x 45	185 x 150.9 x 45	185 x 120 x 45	185 x 120 x 50






Model			
	VTC 1010	VTC1021-BK	VTC1021-C2K
System			
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
I/O Interface			
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 Bus	1 x CAN Bus 2.0B	1 x CAN Bus 2.0B	1 x CAN Bus 2.0B
DC Output	12V (1A)	12V (2A)	12V (2A)
SIM Socket	2	2	2
Expansion			
WWAN	2	1	1
mini-PCIe Socket	- 2 x (USB 2.0, PCIe 2.0) - 1 x (SATA or (USB 2.0 + PCIe)) - 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			
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Back Up Battery	N/A	Optional	N/A
Environment			
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
Operating Temperature	-30°C to 70°C	-40°C to 70°C	-40°C to 70°C
Others			
TPM	N/A	TPM 2.0	TPM 2.0
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



Vehicle Telematics Computer




Model	 NEW	 NEW	 NEW
	VTC 1030	VTC 1031	VTC 1031-C2
System			
CPU	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
Memory	1 x DDR4 2666 SO-DIMM, 4GB (default) up to 3200MHz 32GB, in-band ECC support	1 x DDR4 2666 SO-DIMM, 4GB (default) up to 3200MHz 32GB, in-band ECC support	1 x DDR4 2666 SO-DIMM, 4GB (default) up to 3200MHz 32GB, in-band ECC support
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)
Second Storage	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)
Video Out	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	1 x Mic-in, 1 x Line-out
Ethernet	2 x Intel® 10/100/1000/2500	1 x Intel® 10/100/1000/2500 1 x 10/100/1000	1 x Intel® 10/100/1000/2500 1 x 10/100/1000
PoE	N/A	N/A	2 x Independent Intel® 10/100/1000 (w/ 802.3at/af). Total 60W
I/O Interface			
USB	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
COM	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 DI, 4 x DO	5 x DI, 4 x DO	5 x DI, 4 x DO
CAN Bus	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)
DC Output	12V (2A)	12V (2A)	12V (2A)
SIM Socket	2	2	2
WWAN	1	1	1
Expansion			
mini-PCIe Socket	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
M.2 Socket	- 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 x2) BOM option to 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 x2) BOM option to 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 x2) BOM option to 1 x M.2 2230 Key E (USB 2.0, PCIe 3.0, PCIe 3.0)
GNSS	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			
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Back Up Battery	N/A	N/A	N/A
Ingress Protection	N/A	N/A	N/A
Environment			
Certification	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13
Operating Temperature	-40°C to 70°C	-40°C to 70°C	-40°C to 70°C
TPM	TPM 2.0	TPM 2.0	TPM 2.0
Others			
OS	Win 10, Win 11, Linux (Kernel 4.x)	Win 10, Win 11, Linux (Kernel 4.x)	Win 10, Win 11, Linux (Kernel 4.x)
Dimensions (mm)	185 x 120 x 45	180 x 180 x 50	180 x 180 x 50






Model			
	VTC 6210-BK	VTC 6210-VR4	VTC 6220-BK
System			
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)
I/O Interface			
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 Bus	1 x CAN Bus 2.0B	1 x CAN Bus 2.0B	1 x CAN Bus 2.0B (w/ isolation)
DC Output	12V (2A)	12V (2A)	12V (2A)
SIM Socket	3	3	4
WWAN	2	2	2
Expansion			
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			
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Back Up Battery	N/A	N/A	Optional
Ingress Protection	N/A	N/A	N/A
Environment			
Certification	CE, FCC Class B, E13	CE, FCC Class B, UKCA, E13	CE, FCC Class A, UKCA, E13
Operating Temperature	-30°C to 70°C	-30°C to 70°C	-40°C to 70°C (w/o internal backup battery)
TPM	N/A	N/A	TPM 2.0
Others			
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



Vehicle Telematics Computer




Model			
	VTC 6221	VTC 6222-C4S	VTC 7250-7C8
System			
CPU	Intel Atom® x7-E3950, 4 Core, 2.0GHz	Intel Atom® x7-E3950, 4 Core, 2.0GHz	Intel® Core™ i7-8700T, 6 Core, 4.0GHz
Chipset	N/A	N/A	Intel® Q370
Memory	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
Storage	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)
Second Storage	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)
Video Out	2 x VGA, 1 x HDMI	1 x VGA, 2 x HDMI	1 x VGA, 1 x HDMI, 1 x ultraONE+
Audio	1 x Mic-in, 2 x Line-out	1 x Mic-in, 2 x Line-out	1 x Mic-in, 1 x Line-out
Ethernet	2 x Intel® 10/100/1000, (BOM option up to 3)	1 x Intel® 10/100/1000	1 x Intel® 10/100/1000
PoE	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
I/O Interface			
USB	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)
COM	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
DIO	4 x DI, 4 x DO	4 x DI, 4 x DO (w/ isolation)	4 x DI, 4 x DO
CAN Bus	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)
DC Output	12V (2A)	12V (2A)	12V (2A)
SIM Socket	6 (BOM option up to 8, eSIM BOM optional)	2 (eSIM BOM optional)	3 (eSIM BOM optional)
Expansion			
WWAN	3 (BOM option up to 3)	1	2
mini-PCIe Socket	- 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 2 x M.2 3042 Key B (USB 2.0, USB 3.1) for LTE/5G
M.2 Socket	- 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
GNSS	VIOB-GPS-02 module (u-blox NEO-M8N)	u-blox NEO-M8N onboard	VIOB-GPS-02 module (u-blox NEO-M8N)
Power			
Power Input	DC 9V to 48V	DC 9V to 48V	DC 9V to 36V
Back Up Battery	N/A	N/A	N/A
Ingress Protection	N/A	N/A	N/A
Environment			
Certification	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13
Operating Temperature	-40°C to 70°C	-40°C to 70°C	-30°C to 60°C
Others			
TPM	TPM 2.0, optional	TPM 2.0, optional	TPM 2.0, optional
OS	Win 10, Linux (Kernel 4.x)	Win 10, Linux (Kernel 4.x)	Win 10/11, Linux (Kernel 4.x)
Dimensions (mm)	260 x 196 x 50	260 x 196 x 66.5	260 x 256 x 90.1






Model			
	VTC 7251	VTC 7251-7C4	VTC 7252-7C4IP
System			
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 (9.5 mm)
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
I/O Interface			
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 Bus	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)	2 x CAN Bus 2.0B (w/ isolation)
DC Output	12V (2A)	12V (2A)	12V (2A)
SIM Socket	6 (BOM option up to 8, eSIM BOM optional)	6 (BOM option up to 8, eSIM BOM optional)	2 (eSIM BOM optional)
Expansion			
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			
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Back Up Battery	N/A	N/A	N/A
Ingress Protection	N/A	N/A	IP65
Environment			
Certification	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13
Operating Temperature	-30°C to 70°C	-30°C to 60°C	-30°C to 60°C
Others			
TPM	TPM 2.0	TPM 2.0	TPM 2.0, optional
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



Vehicle Telematics Computer





Model	 NEW	 NEW	 NEW
	VTC 7260-5	VTC 7260-5C4	VTC 7260-7
System			
CPU	Intel® Core™ i5-1145GRE, 4 Core, 2.6GHz	Intel® Core™ i5-1145GRE, 4 Core, 2.6GHz	Intel® Core™ i7-1185GRE, 4 Core, 2.8GHz
Chipset	N/A	N/A	N/A
Memory	2 x DDR4 3200 SO-DIMM, 4GB+4GB (default) up to 32GB+32GB, in-band ECC support	2 x DDR4 3200 SO-DIMM, 4GB+4GB (default) up to 32GB+32GB, in-band ECC support	2 x DDR4 3200 SO-DIMM, 4GB+4GB (default) up to 32GB+32GB, in-band ECC support
Storage	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)
Second Storage	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)
Video Out	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
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
Ethernet	1 x Intel® 10/100/1000 (WoL, PXE, iamt support), 2 x Independent Intel® 2.5GbE	1 x Intel® 10/100/1000 (WoL, PXE, iamt support)	1 x Intel® 10/100/1000 (WoL, PXE, iamt support), 2 x Independent Intel® 2.5GbE
I/O Interface			
PoE	N/A	2 x Independent Intel® GbE, 2 x Independent Intel® 2.5GbE (IEEE 802.3at/af, total 60W)	N/A
USB	3 x USB 3.2 (Gen1), 1 x USB 2.0	3 x USB 3.2 (Gen1), 1 x USB 2.0	3 x USB 3.2 (Gen1), 1 x USB 2.0
COM	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
DIO	4 x DI, 4 x DO	4 x DI, 4 x DO	4 x DI, 4 x DO
CAN Bus	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)
DC Output	N/A	N/A	N/A
SIM Socket	4	4	4
WWAN	1~2	1~2	1~2
Expansion			
mini-PCIe Socket	- 1 x (USB 2.0/3.2, PCIe 3.0)	- 1 x (USB 2.0/3.2, PCIe 3.0)	- 1 x (USB 2.0/3.2, PCIe 3.0)
M.2 Socket	- 1 x M.2 3042/3052 Key B (USB 3.2 (Gen2)) for LTE/5G - 1 x M.2 3030 Key E (PCIe3.0 x2, USB2.0) for Wi-Fi/ Hailo AI card	- 1 x M.2 3042/3052 Key B (USB 3.2 (Gen2)) for LTE/5G - 1 x M.2 3030 Key E (PCIe3.0 x2, USB2.0) for Wi-Fi/ Hailo AI card	- 1 x M.2 3042/3052 Key B (USB 3.2 (Gen2)) for LTE/5G - 1 x M.2 3030 Key E (PCIe3.0 x2, USB2.0) for Wi-Fi/ Hailo AI card
GNSS	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			
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Back Up Battery	N/A	N/A	N/A
Environment			
Ingress Protection	N/A	N/A	N/A
Certification	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13
Operating Temperature	-30°C to 65°C (15W TDP)	-30°C to 65°C (15W TDP)	-30°C to 65°C (15W TDP)
Others			
TPM	TPM 2.0	TPM 2.0	TPM 2.0
OS	Win 10/11, Linux (Kernel 5.x)	Win 10/11, Linux (Kernel 5.x)	Win 10/11, Linux (Kernel 5.x)
Dimensions (mm)	210 x 173 x 75	210 x 173 x 75	210 x 173 x 75



Model	 NEW	 NEW	 NEW
	VTC 7260-7C4	VTC 7270	VTC 7270-C4/C8
System			
CPU	Intel® Core™ i7-1185GRE, 4 Core, 2.8GHz	Intel® Core™ i (Alder Lake-S)	Intel® Core™ i (Alder Lake-S)
Chipset	N/A	Intel® R680E	Intel® R680E
Memory	2 x DDR4 3200 SO-DIMM, 4GB+4GB (default) up to 32GB+32GB, in-band ECC support	2 x DDR5 4800 SO-DIMM, up to 32GB+32GB, ECC support	2 x DDR5 4800 SO-DIMM, up to 32GB+32GB, ECC support
Storage	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)
Second Storage	1 x mSATA 3.0, 1 x M.2 2280 Key M NVMe (PCIe4.0 x4)	1 x M.2 2280 Key M NVMe (PCIe4.0 x4)	1 x M.2 2280 Key M NVMe (PCIe4.0 x4)
Video Out	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
Audio	1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-in, 1 x Line-out	1 x Mic-in, 1 x Line-in, 1 x Line-out
Ethernet	1 x Intel® 10/100/1000 (WoL, PXE, iamt support)	1 x Intel® 10/100/1000 (WoL, PXE, iAMT support), 2 x Independent Intel® 2.5GbE	1 x Intel® 10/100/1000 (WoL, PXE, iamt support)
I/O Interface			
PoE	2 x Independent Intel® GbE, 2 x Independent Intel® 2.5GbE (IEEE 802.3at/af, total 60W)	4 x Independent Intel® 2.5GbE (IEEE 802.3at/af, total 60W, optional)	4/8 x Independent Intel® 2.5GbE (IEEE 802.3at/af, total 60W/120W)
USB	3 x USB 3.2 (Gen1), 1 x USB 2.0	6 x USB 3.2 (Gen2)	6 x USB 3.2 (Gen2)
COM	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
DIO	4 x DI, 4 x DO	4 x DI, 4 x DO	4 x DI, 4 x DO
CAN Bus	1 x CAN Bus 2.0B (w/ isolation)	2 x CAN FD (w/ isolation)	2 x CAN FD (w/ isolation)
DC Output	N/A	12V (2A)	12V (2A)
SIM Socket	4	4	4
WWAN	1~2	1~2	1~2
Expansion			
mini-PCIe Socket	- 1 x (USB 2.0/3.2, PCIe 3.0)	- 1 x (PCIe 3.0, SATA 3.0, USB3.2), default PCIe 3.0 for Wi-Fi - 1 x (USB 3.2, PCIe 3.0, SATA 3.0), default USB 3.2 for LTE - Change interfaces by DIP switch setting	- 1 x (PCIe 3.0, SATA 3.0, USB3.2), default PCIe 3.0 for Wi-Fi - 1 x (USB 3.2, PCIe 3.0, SATA 3.0), default USB 3.2 for LTE - Change interfaces by DIP switch setting
M.2 Socket	- 1 x M.2 3042/3052 Key B (USB 3.2 (Gen2)) for LTE/5G - 1 x M.2 3030 Key E (PCIe3.0 x2, USB2.0) for Wi-Fi/ Hailo AI card	- 1 x M.2 3042/3052 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G - 1 x M.2 3030 Key E (PCIe3.0 x2, USB2.0) for Wi-Fi/ Hailo AI card	- 1 x M.2 3042/3052 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G - 1 x M.2 3030 Key E (PCIe3.0 x2, USB2.0) for Wi-Fi/ Hailo AI card
GNSS	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			
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Back Up Battery	N/A	N/A	N/A
Environment			
Ingress Protection	N/A	N/A	N/A
Certification	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13
Operating Temperature	-30°C to 65°C (15W TDP)	-35°C to 65°C (35W TDP)	-35°C to 65°C (35W TDP)
Others			
TPM	TPM 2.0	TPM 2.0	TPM 2.0
OS	Win 10/11, Linux (Kernel 5.x)	Win 10/11, Linux (Kernel 5.x)	Win 10/11, Linux (Kernel 5.x)
Dimensions (mm)	210 x 173 x 75	260 x 210 x 81	260 x 210 x 81



Modular Vehicle Computer System

Model				
	MVS 5600-3BU	MVS 5600-7BU	MVS 5600-3IPK	MVS 5600-7IPK
System				
CPU	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
Memory	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 (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)
Video Out	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI	1 x VGA	1 x VGA
Audio	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
PoE	N/A	N/A	N/A	N/A
I/O Interface				
USB	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 (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	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 Bus	1 x CAN Bus 2.0B	1 x CAN Bus 2.0B	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)
DC Output	12V (2A)	12V (2A)	12V (2A)	12V (2A)
SIM Socket	3	3	3	3
WWAN	2	2	2	2
Expansion				
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, 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) 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
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				
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Back Up Battery	Internal (optional)	Internal (optional)	N/A	N/A
Environment				
Ingress Protection	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
Operating Temperature	-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
Others				
TPM				
OS	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 196 x 66.5	260 x 196 x 66.5	260 x 198 x 66.5	260 x 198 x 66.5




Railway Computer - Box PC/Panel PC

nROK/vROK Series Brief Product Introduction

Product Description


nROK series, railway computer, in an extended operating temperature range of -40 to 70°C certified EN50155 and IP65 protection depended on models. The SKU with PoE integrated all-in-one computer can also work as a PoE switch and power supply for PoE cameras. Wide-range power input SKU from 24 to 110VDC includes isolation and protection against power dips. Multiple Wi-Fi 6E

and 5G/LTE cellular networks handle the connectivity that provides uninterrupted internet access and more transmission bandwidth, vROK series, all in one railway open frame panel computer, is designed for human machine interface (HMI) and passenger information system aimed at railway onboard infotainment applications.

 5G/LTE, Wi-Fi 6/6E, BT, CAN/OBD, GNSS + DR, POE, and multi-SIM integration

 Front accessible SSD storage

 Optional isolated 24~110VDC power input

 Global navigation satellite system for precise and real-time location

Application

nROK: Communications hub, passenger information system, onboard video surveillance, digital radio data/voice transmission system, freight management system, rail analytics system, rail maintenance applications.

vROK: Human machine interface (HMI), passenger information system, infotainment.

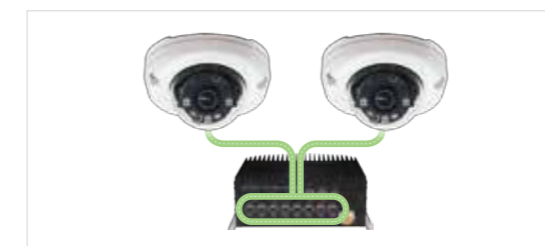
Product Highlight



EN50155 Certificated System



Protection for Voltage Dips






M12 X-coded/D-coded PoE Port for IP Cameras






Open Frame Design Railway Panel Computer

Railway Computer - Box PC




Model			 NEW
	VTC 1911-IPK	nROK 1020-A	nROK 1030-A
System			
CPU	Intel Atom® E3815, 1 Core, 1.46GHz	Intel Atom® x5-E3930, 2 Core, 1.3GHz	Intel Atom® x6211E, 2 Core, 1.3GHz
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 32GB	1 x DDR4 2666 SO-DIMM, 4GB (default) up to 3200MHz 32GB, in-band ECC support
Storage	1 x mSATA	1 x 2.5" SATA 3.0 SSD (9.5mm)	1 x 2.5" SATA 3.0 SSD (9.5mm)
Second Storage	1 x 2.5" SATA 3.0 SSD (9.5mm) or 1 x SATA DOM	1 x mSATA (occupied mPCIe socket)	1 x mSATA (occupied mini-PCIe socket)
Video Out	1 x VGA, 1 x HDMI (optional)	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI
Audio	1 x Mic-in, 1 x Line-out (DB15)	1 x Mic-in, 1 x Line-out (M12)	1 x Mic-in, 1 x Line-out (DB9)
Ethernet	2 x Intel® 10/100/1000 (M12)	1 x Intel® 10/100/1000 (M12)	2 x Intel® 10/100/1000/2500 (M12)
I/O Interface			
PoE	N/A	N/A	N/A
USB	1 x USB 2.0	2 x USB 3.2 (Gen1)	1 x USB 3.2 (Gen2), 1 x USB 2.0
COM	2 x RS232 (Tx, Rx), 1 x RS485	5 x RS232 (Tx, Rx), 2 x RS485	2 x RS232 (full)/422/485
DIO	3 x DI, 3 x DO	5 x Programmable DIO	5 x DI, 4 x DO
CAN Bus	1 x CAN Bus 2.0B	1 x CAN Bus 2.0B	1 x CAN Bus 2.0B (w/ isolation)
DC Output	N/A	12V (2A)	12V (2A)
SIM Socket	2	1	2 (eSIM BOM optional)
WWAN	1	1	1
Expansion			
mini-PCIe Socket	- 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/SATA 3.0) - 1 x (USB 2.0) for LTE	1 x (USB 2.0, PCIe 3.0/SATA 3.0)
M.2 Socket	N/A	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 x2) BOM option to 1 x M.2 2230 Key E (USB 2.0, PCIe 3.0, PCIe 3.0)
GNSS	Onboard u-blox NEO-M8N	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-06 module (u-blox NEO-M9N)
Power			
Power Input	DC 9V to 36V	DC 24V (w/o isolation)	DC 24V (w/o isolation)
Environment			
Ingress Protection	IP67	N/A	N/A
Certification	CE, FCC Class A, UKCA, E13, EN50155	CE, FCC Class A, UKCA, EN50155	CE, FCC Class A, UKCA, EN45545-2, EN50155
Operating Temperature	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)
TPM	TPM2.0	TPM2.0	TPM2.0
Others			
OS	Win 10, Win 8, Win 7, WES 7, Linux (Kernel 4.x)	Win 10 64-bit, Linux (Kernel 4.x)	Win 10/11 64-bit, Linux (Kernel 5.x)
Dimensions (mm)	185 x 167 x 56.5	185 x 120 x 45	185 x 120 x 50






Model	 NEW	 NEW	
	nROK 1031-A	nROK 1031-AC2	VTC 6210-R
System			
CPU	Intel Atom® x6413E, 4 Core, 1.5GHz	Intel Atom® x6413E, 4 Core, 1.5GHz	Intel Atom® E3845, 4 Core, 1.91GHz
Chipset	N/A	N/A	N/A
Memory	1 x DDR4 2666 SO-DIMM, 4GB (default) up to 3200MHz 32GB, in-band ECC support	1 x DDR4 2666 SO-DIMM, 4GB (default) up to 3200MHz 32GB, in-band ECC support	1 x DDR3L 1600 SO-DIMM, 2GB (default) up to 8GB
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 2.0 SSD (removable, 9.5mm)
Second Storage	1 x M.2 2280 Key M NVMe SSD (SATA 3.0)	1 x M.2 2280 Key M NVMe SSD (SATA 3.0)	1 x CFast (external accessible)
Video Out	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI	1 x VGA, 1 x DP
Audio	1 x Mic-in, 1 x Line-out (DB9)	1 x Mic-in, 1 x Line-out (DB9)	2 x Mic-in, 2 x Line-out (Phone Jack)
Ethernet	1 x Intel® 10/100/1000/2500 1 x 10/100/1000 (M12)	1 x Intel® 10/100/1000/2500 1 x 10/100/1000 (M12)	2 x Intel® 10/100/1000 (M12)
I/O Interface			
PoE	N/A	2 x M12 Independent Intel® 10/100/1000/2500 (802.3af/at). Total 60W	N/A
USB	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)	1 x M12 with 2 x USB 2.0 signal, 1 x USB 3.2 (Gen1)
COM	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	2 x RS232 (Full), 1 x RS422/485. (w/ isolation)
DIO	5 x DI, 4 x DO	5 x DI, 4 x DO	4 x DI, 4 x DO (w/ isolation)
CAN Bus	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)
DC Output	12V (2A)	12V (2A)	N/A
SIM Socket	2 (eSIM BOM optional)	2 (eSIM BOM optional)	3
WWAN	1	1	2
Expansion			
mini-PCIe Socket	- 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	- 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
M.2 Socket	- 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 x2) - BOM option to 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 x2) - BOM option to 1 x M.2 2230 Key E (USB 2.0, PCIe 3.0, PCIe 3.0)	N/A
GNSS	VIOB-GPS-06 module (u-blox NEO-M9N)	VIOB-GPS-06 module (u-blox NEO-M9N)	VIOB-GPS-02 module (u-blox NEO-M8N)
Power			
Power Input	DC 24V (w/o isolation)	DC 24V (w/o isolation)	DC 24/36V (w/o isolation), 110V (w/ isolation)
Environment			
Ingress Protection	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
Operating Temperature	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)
TPM	TPM2.0	TPM2.0	N/A
Others			
OS	Win 10/11 64-bit, Linux (Kernel 5.x)	Win 10/11 64-bit, Linux (Kernel 5.x)	Win 10, Win 8, Win 7, WES 7, Linux (Kernel 4.x)
Dimensions (mm)	180 x 180 x 60	180 x 180 x 60	260 x 176 x 70



Railway Computer - Box PC

Model			
	nROK 6221	nROK 6221-IP	nROK 6222-AC4S
System			
CPU	Intel Atom® x7-E3950, 4 Core, 2.0GHz	Intel Atom® x7-E3950, 4 Core, 2.0GHz	Intel Atom® x7-E3950, 4 Core, 2.0GHz
Chipset	N/A	N/A	N/A
Memory	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
Storage	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)
Second Storage	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
Video Out	2 x VGA, 1 x HDMI	2 x VGA	1 x VGA, 2 x HDMI
Audio	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)
Ethernet	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)
I/O Interface			
PoE	N/A	N/A	4 x M12 Intel® 10/100/1000 (802.3af/at). Total 60W
USB	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)
COM	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)
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 Bus	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)
DC Output	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
Expansion			
mini-PCIe Socket	- 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
M.2 Socket	- 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)
GNSS	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	u-blox NEO-M8N onboard
Power			
Power Input	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
Environment			
Ingress Protection	N/A	IP65	N/A
Certification	CE, FCC Class A, UKCA, EN50155	CE, FCC Class A, UKCA, EN50155	CE, FCC Class A, UKCA, EN50155
Operating Temperature	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)
Others			
TPM	TPM 2.0, optional	TPM 2.0, optional	TPM 2.0, optional
OS	Win 10 64-bit, Linux (Kernel 4.x)	Win 10 64-bit, Linux (Kernel 4.x)	Win 10 64-bit, Linux (Kernel 4.x)
Dimensions (mm)	260 x 196 x 70	260 x 198 x 70	260 x 196 x 66.5



Model			
	nROK 7251-7A	nROK 7251-7C4	nROK 7251-WI-7C4IP
System			
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, 15mm)	2 x 2.5" SATA 3.0 SSD (removable, 15mm)	2 x 2.5" SATA 3.0 SSD (removable, 15mm)
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)
I/O Interface			
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 Bus	N/A	N/A	N/A
DC Output	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)
Expansion			
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			
Power Input	DC 24V (w/o isolation)	DC 24V (w/o isolation)	DC 24~110V (w/ isolation)
Environment			
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
Operating Temperature	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)
Others			
TPM	TPM2.0	TPM2.0	TPM2.0
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






Railway Computer - Box PC

Model			
		nROK 7252-AC8S	nROK 7252-WI2-C8S
System	CPU	8/9th Gen Intel® Core™/Xeon® (AI Hailo-8™ onboard option)	8/9th Gen Intel® Core™/Xeon® (AI Hailo-8™ onboard option)
	Chipset	Intel® C246	Intel® C246
	Memory	2 x DDR4 2666 SO-DIMM, up to 64GB	2 x DDR4 2666 SO-DIMM, up to 64GB
I/O Interface	Storage	4 x 2.5" SATA 3.0 SSD (removable, 15mm)	2 x 2.5" SATA 3.0 SSD (removable, 15mm)
	Second Storage	2 x mSATA (occupied mini-PCIe socket) 1 x Removable SD 3.0	2 x mSATA (occupied mini-PCIe socket) 1 x Removable SD 3.0
	Video Out	1 x VGA, 2 x HDMI	1 x VGA, 2 x HDMI
	Audio	1 x Mic-in, 2 x Line-out (DB9)	1 x Mic-in, 2 x Line-out (DB9)
	Ethernet	2 x Intel® 10/100/1000 (M12)	2 x Intel® 10/100/1000 (M12)
	PoE	8 x M12 10/100/1000 (802.3af/at). Total 60W	8 x M12 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)
	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)
	DIO	4 x DI, 4 x DO (w/ isolation)	4 x DI, 4 x DO (w/ isolation)
	CAN Bus	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)
Expansion	DC Output	N/A	N/A
	SIM Socket	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)
	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 M.2 3042 Key B (USB 2.0, USB 3.2 (Gen1)) for LTE/5G - 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 (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 M.2 3042 Key B (USB 2.0, USB 3.2 (Gen1)) for LTE/5G - 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 (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
	GNSS	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)
	Power	DC 24/36V (w/o isolation)	DC 24~110V (w/ isolation, 3-second protection against temporary voltage dips)
Environment	Ingress Protection	N/A	N/A
	Certification	CE, FCC Class A, UKCA, EN50155	CE, FCC Class A, UKCA, EN50155
	Operating Temperature	-40°C to 70°C (OT4)	-40°C to 70°C (OT4)
Others	TPM	TPM2.0	TPM2.0
	OS	Win 10/11 64-bit, Linux (Kernel 4.x)	Win 10/11 64-bit, Linux (Kernel 4.x)
Dimensions (mm)		260 x 266 x 110	260 x 266 x 110



Railway Computer - Panel PC

Model			
		nROK 7270-C4	vROK 3030
System	CPU	Intel® Core™ i (Alder Lake S)	
	Chipset	Intel® R680E	
	Memory	2xDDR5 4800SO-DIMM, 8GB (default) up to 32GB+32GB, ECC support	
I/O Interface	Storage	2 x 2.5" SATA 3.0 SSD (removable, 15mm)	
	Second Storage	1 x mSATA (occupied mini-PCIe socket) 2 x M.2 Key B (occupied M.2 socket)	
	Video Out	1 x VGA, 1 x HDMI	
	Audio	1 x Mic-in, 1 x Line-out (M8)	
	Ethernet	1 x Intel® 10/100/1000/2500 (M12)	
	PoE	4 x M12 Independent Intel® 2.5GbE (802.3af/at). Total 60W. Optional additional 8 x M12 1GbE Ethernet switch (802.3af/at). Total 60W.	
	USB	1 x M12 with 2 x USB 2.0 signal, 2 x USB 3.2 (Gen2)	
	COM	2 x RS232 (Full)/422/485. (w/ isolation)	
	DIO	4 x DI, 4 x DO (w/ isolation)	
	CAN Bus	2 x CAN FD (w/ isolation)	
Expansion	DC Output	N/A	
	SIM Socket	4/8 (eSIM BOM optional)	
	WWAN	2/4	
	mini-PCIe Socket	- 1 x (USB 2.0, PCIe 3.0/SATA 3.0) - 2 x (USB 2.0, PCIe 3.0) (optional)	
	M.2 Socket	- 2/4 x M.2 3042/3050/3052 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G - 1 x M.2 2230 Key E (USB 2.0, PCIe 3.0 x2). BOM option to 1 x M.2 2230 Key E (USB 2.0, PCIe 3.0, PCIe 3.0)	
	GNSS	VIOB-GPS-06 module (u-blox NEO-M9N)	
	Power	DC 24/36V (w/o isolation)	
Environment	Ingress Protection	N/A	
	Certification	CE, FCC Class A, UKCA, EN50155	
	Operating Temperature	-25°C to 70°C (OT3)	
Others	TPM	TPM2.0	
	OS	Win 10/11 64-bit, Linux (Kernel 4.x)	
Dimensions (mm)		260 x 210 x 80	

Model		
		vROK 3030
Display	LCD Size	10.4" TFT LCD
	Resolution	1024 x 768
	Brightness (Typ.)	1200cd/m²
System	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)
I/O Interface	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)
	Speaker	N/A
	Control Button	BOM optional
	Video Out	1 x HDMI, 1 x DP
	Video Input	4 x CVBS
	Audio	1 x Line-in, 2 x Line-out (DB9)
	Ethernet	2 x Intel® 10/100/1000/2500 (M12)
Expansion	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 Bus	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)	
Power	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	VIOB-GPS-06 module (u-blox NEO-M9N)
Environment	Power Input	DC 24/36V (w/o isolation) DC 24/110V (w/ isolation, optional)
	Back Up Battery	N/A
Others	Ingress Protection	N/A
	Certification	CE, FCC Class A, UKCA, EN50155
	Operating Temperature	-30°C to 70°C (OT3), w/o PoE -30°C to 60°C (OT1), w/ PoE
TPM		TPM 2.0
OS		Win 10/11 64-bit, Linux (Kernel 4.x)
Mounting		VESA 75
Dimensions (mm)		309 x 230.6 x 67.7



Vehicle Network Switch

VES Series Brief Product Introduction

Product Description

VES Series is the unmanaged mobile vehicle and railway PoE switch that ensures stable network service for telematics applications. Enclosed in a fanless rugged chassis, they support a wide voltage input range, fully

operable under shock, vibration, and a harsh temperature range. The reliable mobile vehicle and railway PoE switch is certified with E-MARK and EN50155.

EN 50155 EN50155 and E-MARK certification

-40~70°C operating temperature

M12 X-coded LAN connector

Compact and ruggedized enclosure design

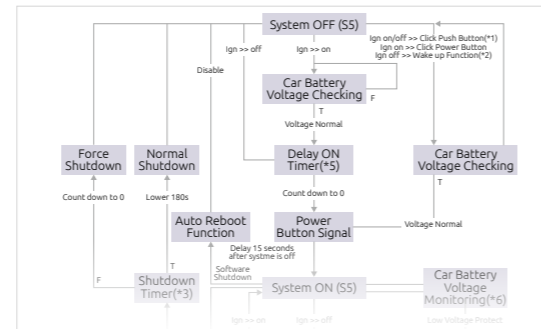
Application

- Video surveillance
- Wireless Gateway
- Passenger Infotainment System

Product Highlight



Dedicated for on-board vehicle/train systems



Ignition power management: power on/off delay, wide voltage input 9~36VDC, low voltage protection



COMPLIANT MIL-STD 810H

Ultra-rugged enclosure, comply with MIL-STD-810H against vibration and shock impact.



Rich 4/8-port IEEE 802.3af/at compliant PoE, up to 30W/port

	NEW	NEW	NEW	NEW
Model	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
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)
Others	Dimensions (mm) 167 x 140 x 52	Dimensions (mm) 167 x 140 x 52	Dimensions (mm) 167 x 140 x 85	Dimensions (mm) 167 x 140 x 85



Vehicle Mount Computer and Display


VMC and VMD Series Brief Product Introduction


Product Description

The VMC series is a durable vehicle mount computer suitable for warehouse, ports, logistics, and material handling markets. Its IP65 rating protects against water/dust damage and its sunlight readability ensures display visibility. Optional back-up battery preserves data when car power battery fails, while wide-range power input (9~60VDC) allows for use in various facilities, forklifts, and

vehicles. The VMD series is a tough TFT LCD monitor with a resistant or projected capacitive touchscreen, ideal for in-vehicle use. Its high-brightness display and automatic brightness control make it suitable for use in various lighting conditions. With an IP65 rating it is protected against water/dust damage, and its over 1000 nits display ensures excellent visibility.

 Full IP65 compliance

 Vibration and shock resistant

 5G/LTE, Wi-Fi 6/6E, BT, CAN/OBD, GNSS + DR, and multi-SIM integration

 E-MARK certification

Application

- Fleet management
- warehouse management
- port management applications.

Product Highlight



Wide range power input 9~60VDC



Back-up battery provides uninterrupted power






Sunlight readability & high brightness







Impact protection IK08

Vehicle Mount Computer





Model				
	VMC 110/111	VMC 1100	VMC 220-PC1	
Display	LCD Size	7" TFT LCD	7" TFT LCD	8" TFT LCD
	Resolution	1024 x 600	800 x 480	1280 x 720
	Brightness (Typ.)	500cd/m²	400cd/m²	1000cd/m²
	Contrast Ratio	800:1	600:1	1000:1
	View Angle	V: 70/75 H: 75/75	V: 50/70 H: 70/70	V: 85/85 H: 85/85
System	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	Projected capacitive, anti-glare
	CPU	NXP i.MX6 Dual Lite, 2 Core, 800 MHz	Intel Atom® E3825, 2 Core, 1.33GHz	NXP i.MX8M, 4 Core, 1.3 GHz
	Chipset	N/A	N/A	N/A
	Memory	1 x 2GB DDR3L onboard	1 x DDR3L 1600 SO-DIMM, 2GB (default) up to 8GB	1 x LPDDR4 2400 SDRAM 3GB onboard
I/O Interface	Storage	1 x eMMC 8GB 1 x Micro SD	1 x SATA 3.0 SATA DOM 3.0	1 x eMMC 32GB 1 x Micro SD
	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~ F5 function key 1 x Power button 2 x Brightness/volume control 1 x System reset button	F1~ F4 function key (4 x brightness/volume control) 1 x Shift key 1 x Power button
	Video Out	N/A	N/A	1 x Shift key
	Video Input	N/A	N/A	1 x Power button
Expansion	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
	Ethernet	1 x Intel® 10/100/1000	1 x Intel® 10/100/1000	1 x Intel® 10/100/1000 (M12)
	PoE	N/A	N/A	N/A
	USB	3 x USB 2.0	1 x USB 3.2 (Gen1)	3 x USB 2.0
	COM	1 x RS232 (Full), 1 x RS232 (Tx, Rx)/485	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
Environment	DIO	3 x DI, 3 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 Bus	2 x CAN Bus 2.0B	2 x CAN Bus 2.0B	1 x CAN Bus 2.0B (w/ isolation)
	SIM Socket	1	1	2
	WWAN	1	1	1
	mini-PCIe Socket	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) for LTE	N/A
Others	M.2 Socket	N/A	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
	GNSS	Onboard u-blox NEO-M8N	Onboard u-blox NEO-M8N	VI0B-GPS-02 module (u-blox NEO-M8N)
	Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 60V
	Back Up Battery	N/A	N/A	N/A
	Ingress Protection	Front panel IP54	Front panel IP54	IP65
Certification	Certification	CE, FCC Class B, UKCA, E13	CE, FCC Class B, UKCA, E13, SAE J1113, SAE J1455, ISO7637-2, EN 60950-1 LVD	CE, FCC Class B, UKCA, E13, IK08
	Operating Temperature	-20°C to 70°C	-20°C to 60°C	-40°C to 70°C
	TPM	N/A	N/A	TPM 2.0, optional
OS	OS	Android 5.1	Win 10 64-bit, Win 8, WES8, Win 7, WES 7, Linux (Kernel 4.x)	Linux
	Mounting	VESA 75	VESA 75	VESA 75
Dimensions (mm)	213 x 145 x 40	213 x 145 x 50	250 x 179 x 68	



Vehicle Mount Computer

		Coming soon		
Model				
		VMC 320-AC0	VMC 2020-PC1	VMC 3020
Display	LCD Size	10.1" TFT LCD	8" TFT LCD	10.4" TFT LCD
	Resolution	1280 x 800	1280 x 720	1024 x 768
	Brightness (Typ.)	1000cd/m ²	1000cd/m ²	1200cd/m ²
	Contrast Ratio	1000:1	1000:1	900:1
	View Angle	V: 85/85 H: 85/85	V: 85/85 H: 85/85	V: 85/85 H: 85/85
System	Brightness Adjustment	Auto via light sensor	Auto via light sensor	Auto via light sensor
	Touch Screen	Projected capacitive, anti-glare	Projected capacitive, anti-glare	5-wire resistive, anti-glare
	CPU	NXP i.MX 8M Plus	Intel Atom® x7-E3950, 4 Core, 2.0GHz	Intel Atom® x5-E3930, 4 Core, 1.3GHz
System	Chipset	N/A	N/A	N/A
	Memory	1 x LPDDR4 2400 SDRAM 3GB onboard	1 x DDR3L 1866 SO-DIMM, 4GB (default) up to 8GB	1 x DDR3L 1866 SO-DIMM slot 4GB (default) up to 8GB
I/O Interface	Storage	1 x eMMC 16GB 1 x Micro SD	1 x eMMC 64GB 1 x mSATA (occupied mini-PCIe socket)	1 x CFast 1 x 2.5" SATA 3.0 SSD bay (9.5mm)
	Speaker	2 x Built-in speaker	2 x Built-in speaker	2 x Built-in speaker
	Control Button	F1~ F5 function key (4 x brightness/volume control, 1 x mute) 1 x Power button	F1~ F4 function key (4 x brightness/volume control) 1 x Shift key 1 x Power button	1 x Power button 2 x Brightness control 2 x Volume control 5 x Function key 1 x Shift key
	Video Out	1 x HDMI	N/A	N/A
	Video Input	1 x HDMI (BOM optional)	4 x CVBS (optional)	N/A
	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
	Ethernet	1 x Intel® 10/100/1000 (M12)	1 x Intel® 10/100/1000 (M12)	1 x Intel® 10/100/1000
	PoE	N/A	N/A	N/A
	USB	2 x USB 2.0 1 x USB 3.2 (Gen1)	1 x USB 3.2 (Gen1) 2 x USB 2.0 1 x RS232 (full), 1 x RS232 (Tx, Rx), 1 x RS232 (Tx, Rx)/RS422/RS485	2 x USB 2.0 (5V/1.0A) 1 x Power USB (5V/1.5A, 12V/1.5A)
	COM	2 x RS232 (full)/422/485	1 x PWM, 1 x Direction, 2 x DI, 2 x DO	2 x Powered RS232 (full, 5V/1.5A, 12V/1.5A)
	DIO	2 x DI, 2 x DO	1 x CAN Bus 2.0B (w/ isolation)	1 x CAN Bus 2.0B (w/ isolation)
	CAN Bus	1 x CAN FD (w/ isolation)	2	2
	SIM Socket	2	1	1
	WWAN	1	1	1
	mini-PCIe Socket	N/A	1 x (USB 2.0, PCIe 2.0) 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
Expansion	M.2 Socket	- 1 x M.2 2230 Key E (USB 2.0, PCIe 3.0) - 1 x M.2 3042/3050/3052 Key B (USB 3.2 (Gen1)) for LTE/5G	- 1 x M.2 3042/3050/3052 Key B (USB2.0, USB 3.2 (Gen1)) for LTE/5G	- 1 x M.2 2230 Key E (USB 2.0, PCIe 2.0, SDIO 3.0, UART)
	GNSS	VIOB-GPS-06 module (u-blox NEO-M9N)	VIOB-GPS-02 module (u-blox NEO-M8N)	Optional
Environment	Power Input	DC 9V to 60V	DC 9V to 60V	DC 9V to 60V
	Back Up Battery	Optional	N/A	Optional
	Ingress Protection	Front Panel IP65	IP65	Front Panel IP65
	Certification	CE, FCC Class B, UKCA, E13, IK08	CE, FCC Class B, UKCA, E13, IK08	CE, FCC Class B, UKCA, E13
Others	Operating Temperature	-30°C to 70°C	-30°C to 60°C	-30°C to 60°C
	TPM	TPM 2.0	TPM 2.0, optional	N/A
	OS	Linux	Win 10 64-bit, Linux (Kernel 4.x)	Win 10 64-bit, Linux (Kernel 4.x)
Mounting	VESA 75/100	VESA 75	VESA 75/100	
Dimensions (mm)	289.9 x 223.3 x 36	250 x 179 x 68	290 x 230 x 68	






		Coming soon			
Model					
		VMC 3021	VMC 3030-AC0	VMC 4020-4A0	VMC 4020-4A1
Display	LCD Size	10.4" TFT LCD	10.1" TFT LCD	12.1" TFT LCD	12.1" TFT LCD
	Resolution	1024 x 768	1280 x 800	1024 x 768	1024 x 768
	Brightness (Typ.)	1200cd/m ²	1000cd/m ²	1200cd/m ²	1200cd/m ²
	Contrast Ratio	900:1	1000:1	750:1	750:1
	View Angle	V: 85/85 H: 85/85	V: 85/85 H: 85/85	V: 85/85 H: 85/85	V: 85/85 H: 85/85
System	Brightness Adjustment	Auto via light sensor	Auto via light sensor	Auto via light sensor	Auto via light sensor
	Touch Screen	5-wire resistive, anti-glare	Projected capacitive, anti-glare	5-wire resistive, anti-glare	5-wire resistive, anti-glare
	CPU	Intel Atom® x7-E3950, 4 Core, 2.0GHz	Intel Atom® N100, 4 Core, 3.4GHz	Intel Atom® x7-E3950, 4 Core, 2.0GHz	Intel Atom® x7-E3950, 4 Core, 2.0GHz
System	Chipset	N/A	N/A	N/A	N/A
	Memory	1 x DDR3L 1866 SO-DIMM slot 4GB (default) up to 8GB	1 x DDR5 4800 SO-DIMM slot 8GB (default) up to 16GB	1 x DDR3L 1866 SO-DIMM slot 4GB (default) up to 8GB	1 x DDR3L 1866 SO-DIMM slot 4GB (default) up to 8GB
I/O Interface	Storage	1 x CFast 1 x 2.5" SATA 3.0 SSD bay (9.5mm)	1 x M.2 2280 Key M 1 x Micro SD (BOM optional)	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)
	Speaker	2 x Built-in speaker	2 x Built-in speaker	2 x Built-in speaker	2 x Built-in speaker
	Control Button	1 x Power button 2 x Brightness control 2 x Volume control 5 x Function key 1 x Shift key	F1~ F5 function key (4 x brightness/volume control, 1 x mute) 1 x Power button	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
	Video Out	N/A	1 x HDMI	N/A	N/A
	Video Input	3 x CVBS	N/A	3 x CVBS	3 x CVBS
	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 (M12)	1 x Intel® 10/100/1000/2500 (M12)	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000 (M12)
	PoE	1 x (802.3af/at). Total 30W (optional)	N/A	1 x (802.3af/at). Total 30W (optional)	1 x (802.3af/at). Total 30W (optional)
	USB	2 x USB 2.0	1 x USB 2.0 2 x USB 3.2 (Gen2)	2 x USB 2.0	2 x USB 2.0
	COM	1 x RS232 (full)/422/485, 1 x RS232 (Tx, Rx)/422/485	2 x RS232 (full)/422/485	2 x RS232 (full)/422/485	1 x RS232 (full)/422/485, 1 x RS232 (Tx, Rx)/422/485
	DIO	2 x DI, 2 x DO	2 x DI, 2 x DO	1 x DI, 2 x DO	2 x DI, 2 x DO
	CAN Bus	2 x CAN Bus 2.0B (w/ isolation)	1 x CAN FD (w/ isolation)	2 x CAN Bus 2.0B (w/ isolation)	2 x CAN Bus 2.0B (w/ isolation)
	SIM Socket	2	2	2	2
	WWAN	1	1	1	1
	mini-PCIe Socket	3 x (USB 2.0, PCIe 2.0) 1 x (USB 2.0) for LTE	1 x (USB 2.0, PCIe 3.0/SATA 3.0)	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
Expansion	M.2 Socket	N/A	- 1 x M.2 3042/3050/3052 Key B (USB 2.0, USB 3.2 (Gen2)) for LTE/5G - 1 x M.2 2230 Key E (USB 2.0, PCIe 3.0 x2). BOM option to - 1 x M.2 2230 Key E (USB 2.0, PCIe 3.0, PCIe 3.0)	N/A	N/A
	GNSS	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-06 module (u-blox NEO-M9N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)
Environment	Power Input	DC 9V to 60V	DC 9V to 60V	DC 9V to 60V	DC 9V to 60V
	Back Up Battery	Optional	Optional	Optional	Optional
	Ingress Protection	IP65	Front Panel IP65	Front Panel IP65	IP65
	Certification	CE, FCC Class B, UKCA, E13	CE, FCC Class B, UKCA, E13, IK08	CE, FCC Class B, UKCA, E13	CE, FCC Class B, UKCA, E13
Others	Operating Temperature	-30°C to 60°C	-30°C to 60°C	-30°C to 60°C	-30°C to 60°C
	TPM	N/A	TPM 2.0	N/A	N/A
	OS	Win 10 64-bit, Linux (Kernel 4.x)	Win 10/11 64-bit, Linux (Kernel 4.x)	Win 10 64-bit, Linux (Kernel 4.x)	Win 10 64-bit, Linux (Kernel 4.x)
Mounting	VESA 75/100	VESA 75/100	VESA 75/100	VESA 75/100	
Dimensions (mm)	290 x 230 x 68	289.9 x 223.3 x 36	340 x 262 x 75	340 x 262 x 75	



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
Operating Temperature	-20°C to 70°C	-20°C to 60°C	-20°C to 60°C
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




Model			
	VMD 2003	VMD 3002-BS2	VMD 3110
LCD Size	8" TFT LCD	10.4" TFT LCD	10.4" TFT LCD
Resolution	800 x 600	1024 x 768	1024 x 768
Brightness (Typ.)	1000cd/m²	1200cd/m²	1200cd/m²
Contrast Ratio	500:1	900:1	900:1
View Angle	V: 60/60 H: 70/70	V: 85/85 H: 85/85	V: 85/85 H: 85/85
Brightness Adjustment	Auto via light sensor	Auto via light sensor	Auto via light sensor
Touch Screen	4-wire resistive, anti-glare	Projected capacitive	Projected capacitive
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 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
Video Input	ultraONE+, 4 x CVBS	VGA, 4 x CVBS	ultraONE+, 4 x CVBS
Audio	1 x Line-out (lateral side) 1 x Mic-in (lateral side)	1 x Line-in	1 x Line-in
USB	1 x USB 2.0	1 x USB 2.0	1 x USB 2.0
Remote Power Button	Remotely power on/off VTC, MVS & ATC	N/A	Remotely power off VTC, MVS & ATC
Power Input	DC 24V (via ultraONE+)	DC 9V to 36V	DC 24V (via ultraONE+)
Ingress Protection	Front panel IP54	IP65	IP65
Certification	CE, FCC Class B, UKCA	CE, FCC Class B, UKCA	CE, FCC Class B, UKCA
Operating Temperature	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C
Mounting	VESA 75	VESA 75/100	VESA 75/100
Dimensions (mm)	207 x 173 x 36.7	256.5 x 202.1 x 31.5	256.5 x 202.1 x 31.5







Add-on Modules and Devices

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



Model				
Description	M.2 to mini-PCIe converter module	mini-PCIe to M.2 converter module	mini-PCIe to M.2 converter module	2 x Mic-in & 2 x Line-out module
I/O Interface	Input I/F	USB 2.0, USB 3.0	USB 2.0, USB 3.2 (Gen1)	USB 2.0, PCIe 3.0
	Input Connector	M.2 Key B + M	mini-PCIe	mini-PCIe
	Output I/F	mini-PCIe	M.2 3042/3050/3052 Key B	M.2 2230 Key E
	Output Connector	mini-PCIe (socket)	M.2 (socket)	M.2 (socket)
Environment/ Others	Operating Temperature	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
	Form Factor	M.2 3042/3052 Key B + M	Full-Size mini-PCIe	Full-size mini-PCIe
	Dimensions (mm)	62 x 31	65 x 30	51 x 30
	Remark	Only for LTE module	USB 3.2 (Gen1) depended by ainbord	-



Model				
Description	u-blox M8N module	u-blox M9N module	u-blox M8L module	u-blox M9V module
I/O Interface	Input I/F	UART	UART	UART
	Input Connector	6-pin wafer	6-pin wafer	6-pin wafer
	Output I/F	UART	UART	UART
	Output Connector	6-pin wafer	6-pin wafer	6-pin wafer
Environment/ Others	Operating Temperature	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
	Form Factor	Proprietary	Proprietary	Proprietary
	Dimensions (mm)	25.4 x 25.4	25.4 x 25.4	25.4 x 25.4
	Remark	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



Model				
Description	Dual port 10GbE module with SFP+ for aROK 5510	External attachable power isolation kit	Vehicle relay module	External attachable power isolation kit
I/O Interface	Input I/F	PCIe 3.0	VTK 6222-APK: 24VDC VTK 6222-FPK: 110VDC	USB 2.0 or RS-232 (Tx/Rx)
	Input Connector	PCIe 3.0 x8	M12 (5-pin)	USB type A or DB9
	Output I/F	Dual port SFP+, 10/1GbE	24VDC	4 x Relay 4 x DI 4 x DO 1 x Analog input 1 x Frequency input
	Output Connector	2 x SFP+	M12 (5-pin)	Terminal block
Environment/ Others	Operating Temperature	-40°C~70°C	-40°C to 70°C	-40°C to 85°C
	Form Factor	Proprietary	Proprietary	Proprietary
	Dimensions (mm)	96.7 x 181.5 x 37.4	120 (W) x 198 (D) x 50 (H)	126 (W) x 124 (D) x 24 (H)
	Remark	Only for aROK 5510	Only for nROK 6222	It is remotely controlled through USB or RS-232 communication



HDMI over IP Extender


VIP Series Brief Product Introduction


Product Description

VIP Series is a new E-MARK certified in-vehicle HDMI extender over IP solution designed with 9~36VDC wide voltage input range, specifically for railway and bus public transport Passenger infotainment System.

VIP Series works over standard networking devices with wide operating temperature support, and outputs to multiple Full HD HDMI displays up to 100m.

 Wide-range 9-36Vdc input voltage

 Unicast and daisy chain support

 E-MARK for in-vehicle application

 Dual Full HD HDMI output

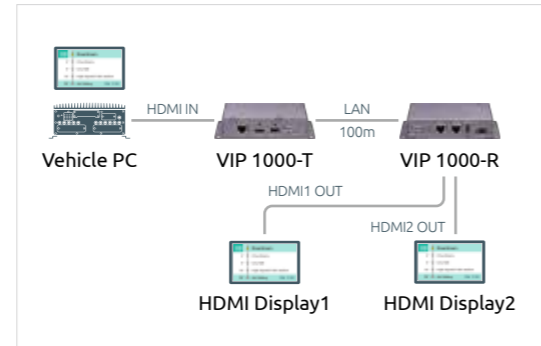
Application

- Video on demand
- Passenger Infotainment System

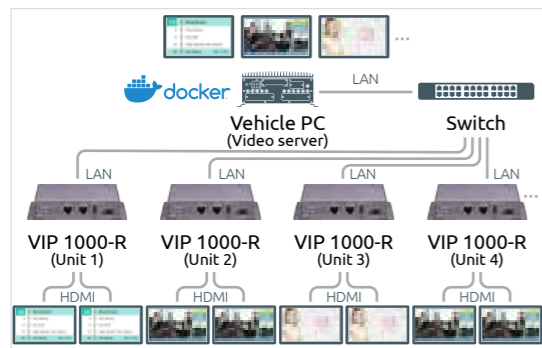
Product Highlight



Dedicated for in-vehicle & railway PIS application





Support dual Full HD HDMI output + Up to 100 meter distance



RTSP Video on demand with Docker platform



Easy to use. Plug and play!!

	 NEW	 NEW
Model	VIP 1000-T	VIP 1000-R
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
Power Supply	1 x 10/100/1000	2 x 10/100/1000 LAN switch
Power Input	DC 9V to 36V	DC 9V to 36V
Environment	Yes	Yes
Certification	CE, FCC Class A, UKCA, E13	CE, FCC Class A, UKCA, E13
Operating Temperature	-20°C to 70°C	-20°C to 70°C
Dimensions (mm)	130 x 100 x 31	130 x 100 x 31



About NEXCOM

Reliable Partner for the AIoT Digital Transformation Solutions

Committed to Customer Success

Founded in 1992 and headquartered in Taipei, Taiwan, NEXCOM is committed to being your trustworthy partner in building the AIoT Digital Transformation 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, to the United States, 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 and USA have obtained ISO 9001:2015 Certification.



IAS	IoT Automation Solutions: Industrial Automation & I4.0 Execution, Intelligent Edge, Gateway & EWR, Industrial Robot Control, EtherCAT Motion Solutions, Wireless & Embedded Solutions for Industrial IoT
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, Edge AI, and ODM Customization Services
MCS	Mobile Computing Solutions: Edge AI Telematics Computer, Vehicle Telematics Computer, Railway Computer, Vehicle Mount Computer, Vehicle Mount Display, In-Vehicle Networking, In-Vehicle HDMI Extender over IP, Fitness Console
MHI	Medical and Healthcare Informatics: Total Solutions with a Variety of Medical IT Systems
NCS	Network and Communication Solutions: Cyber Security, HPC, Telecommunications, Storage, SDN/NFV, 5G, uCPE, ICS 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 six 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 help our customers to deliver vertical solutions, optimized for the next wave of 5G, AI, IoT and Industry 4.0 solutions.

Global Fulfillment Service

Product delivery and customer support are always more effective when delivered locally. NEXCOM localizes support and provides a global customer service network to handle all aspects of global business, from presales, order taking, and system assembly to logistics. For expeditious product delivery, NEXCOM has established four regional service centers: Taiwan (for Asia), USA (for North America and South America), the United Kingdom (for Europe) and China. Therefore, NEXCOM customers benefit from quality assured product assembly and four service centers.

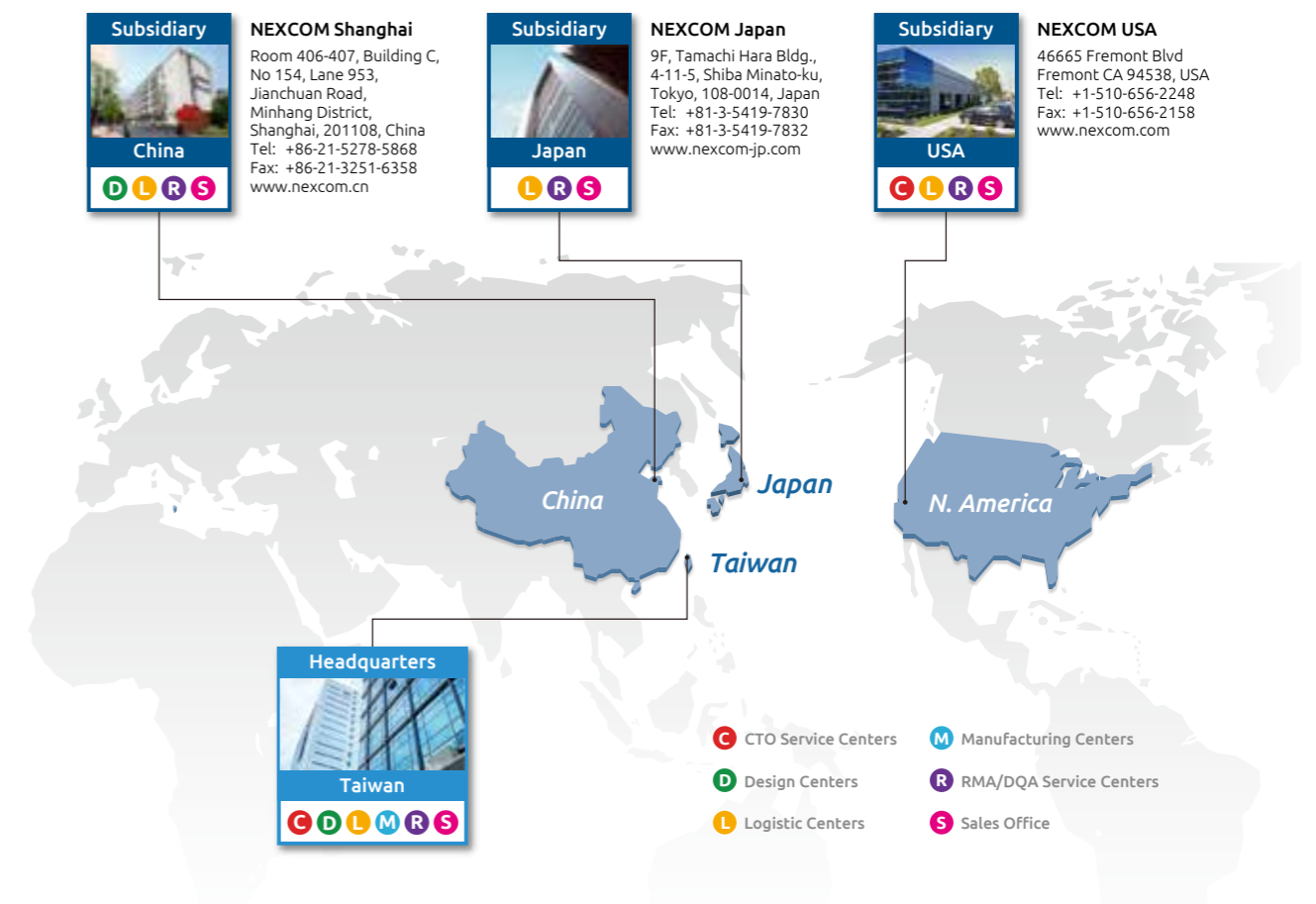
NEXCOM has invested heavily to establish operational infrastructures, including advanced equipment and facilities, not only at its global headquarters but also at subsidiary offices. Today, each of our service centers, with ISO 9001:2008 certification, has a purpose built assembly line, RMA/ DOA center and warehouse storage capability.

Quality Assurance

Under a strict Quality Assurance System, product design and reliability are controlled to support all critical solutions, and ensure Total Quality Assurance (TQA) implementation for all NEXCOM products and service. Furthermore, NEXCOM technical support team aims to provide feedback within 24 hours to ensure technical issues are resolved in the shortest possible time.

Green Policy

As a global citizen, NEXCOM is committed to providing green products and services, which are compliant with WEEE and RoHS legislation. NEXCOM continues to proactively work with industry peers and suppliers, to clarify standards, and identify compatible technologies and practices that help reduce hazardous substances from our products and manufacturing processes.



Service Warranty	Global Service Network	Re-imaging and ECO Upgrade	eRMA Portal for Traceability	24M Warranty for Off the Shelf Products
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Service details may vary by country. Please contact us for more details.

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Committed to Customer Success

Please verify specifications before quoting. This guide is intended for reference purpose only.
All product specifications and information are subject to change without notice.

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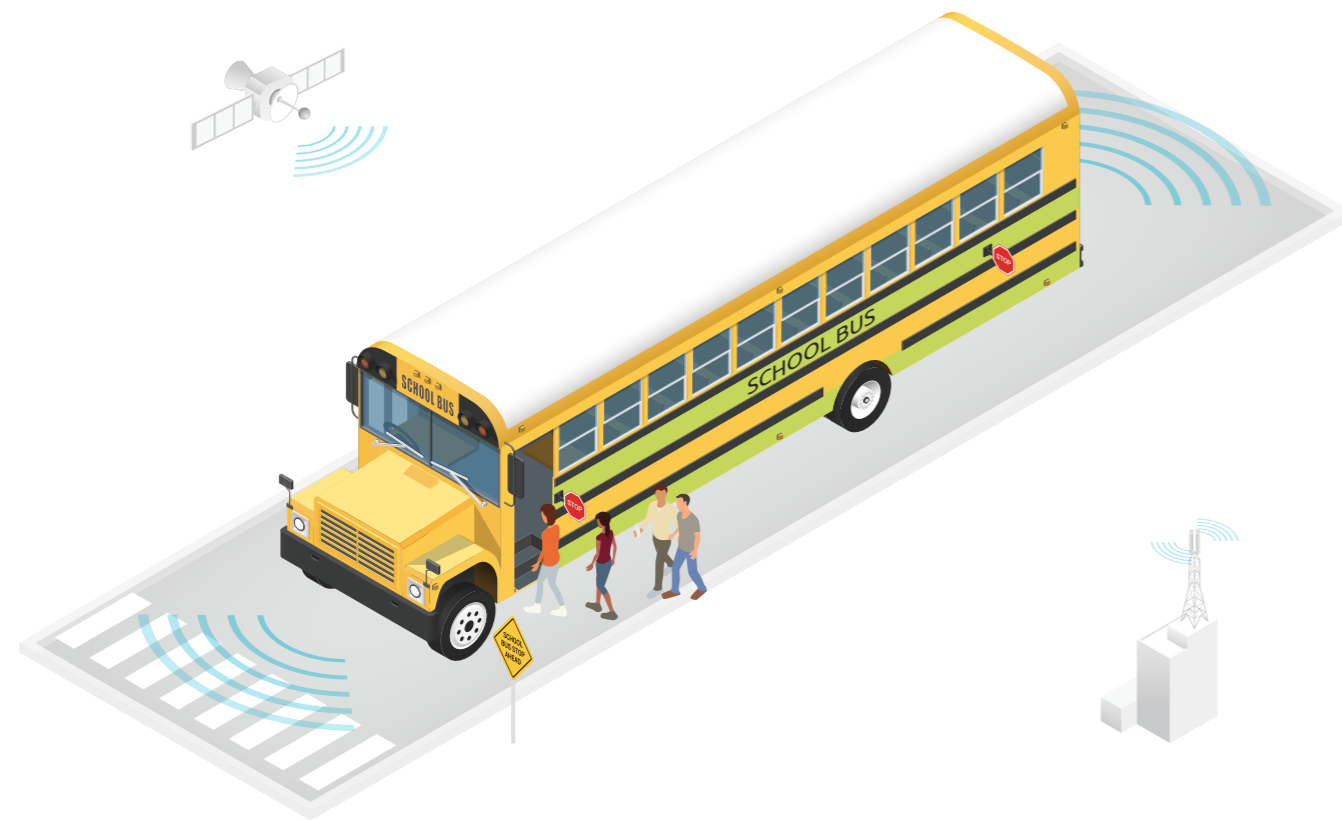
Video Surveillance -

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



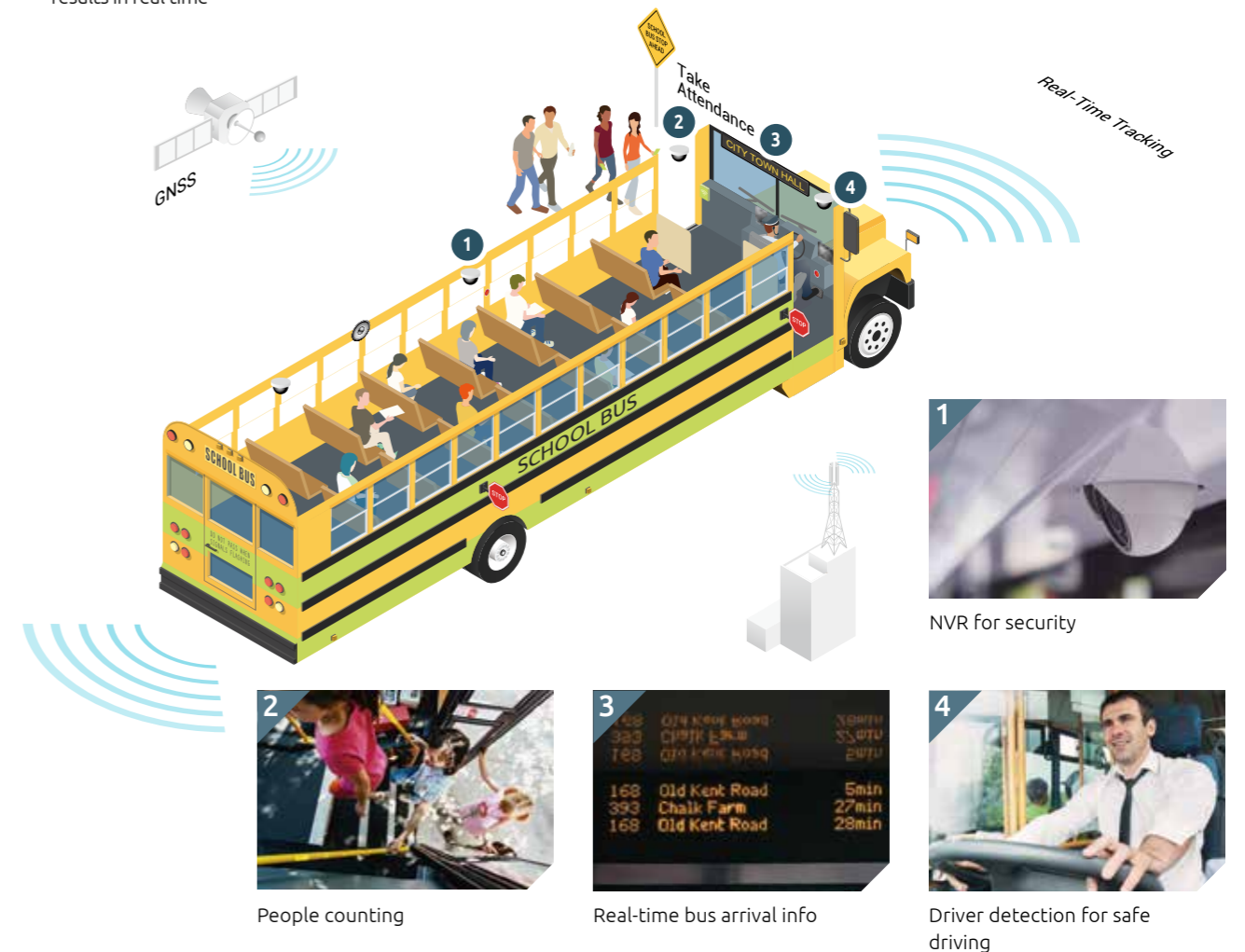
NEXCOM's Solutions

- 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