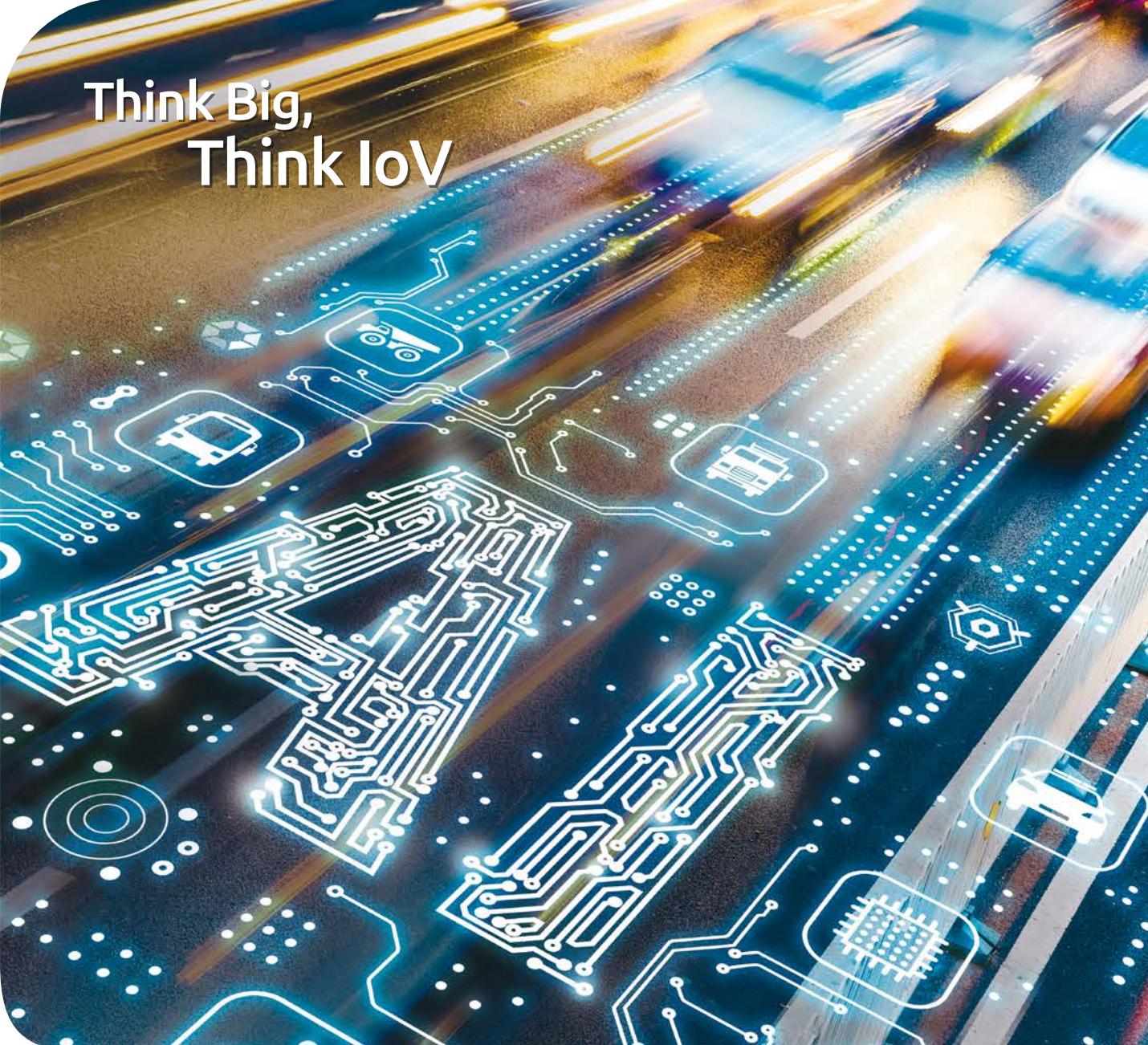




COMMITTED TO CUSTOMER SUCCESS

Think Big,
Think IoV



2019 Mobile Computing Solutions Product Selection Guide

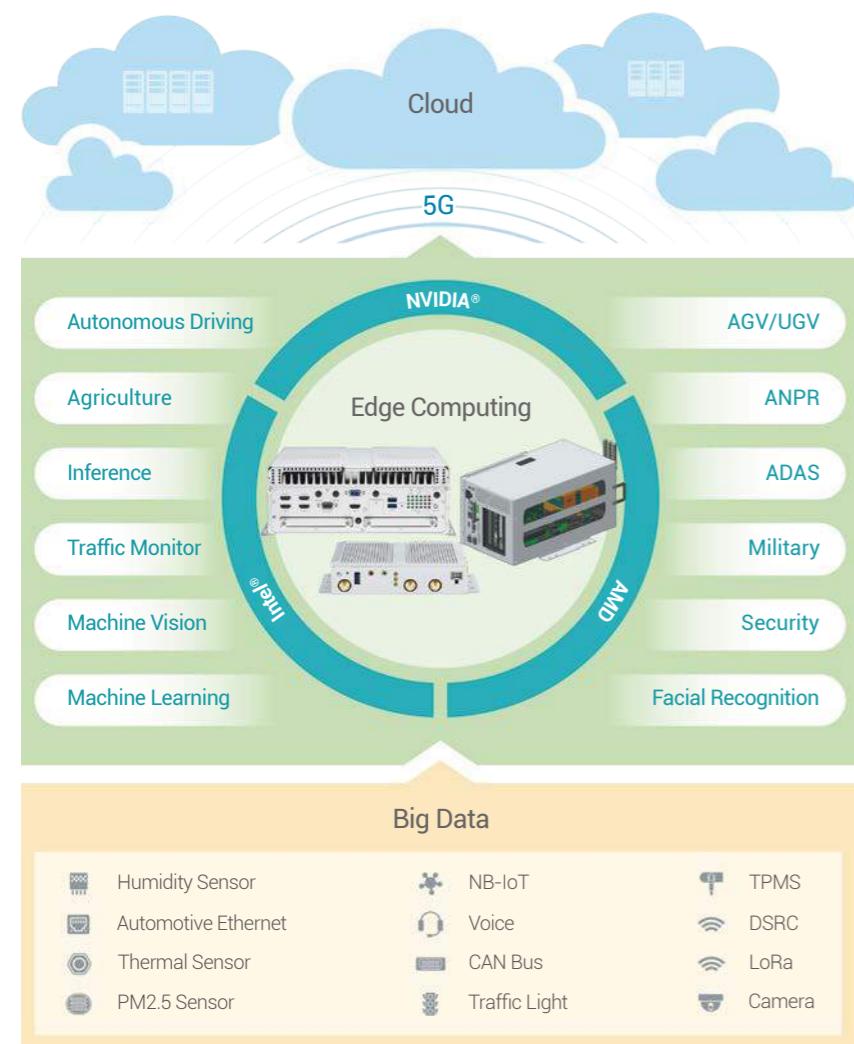
Our Core Competency -

Building Foundation for Interconnected IoV and Value-Added Innovation



Ahead of AI + Mobile Edge Computing in the 5G Era

- Specialize in NVIDIA®, Intel® Movidius and AMD GPU technology
- Support partners to drive deeper customer engagement in AI + mobile edge computing applications
- Provide edge processing and AI capabilities to software partners/developers to create innovation and new business models
- Improve the efficiency of collecting rich data and the precise measurement capability for optimal local decision making



Keep Up with the Trends and Introduce New Technologies

- Close relationship with key silicon players
- Familiar with ARM/X86 platform and Linux/Windows/Android OS
- Specialize in GPU technology and develop MXM, mini-Pcie and M.2 module with GPU
- DSRC, 5G, NB-IoT and LoRa wireless communication technologies
- Automotive Ethernet, a new vehicle internal network
- Solid programming skill, good understanding on S/W and H/W integration

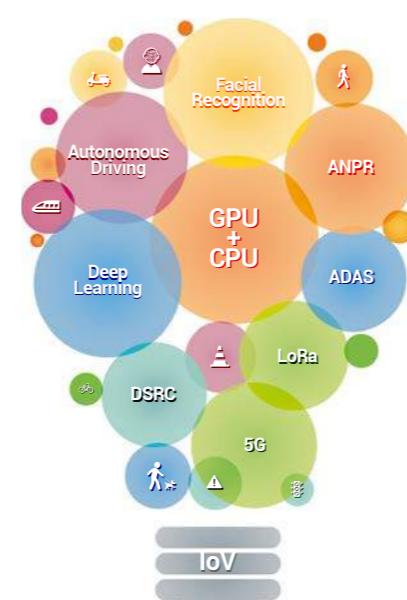


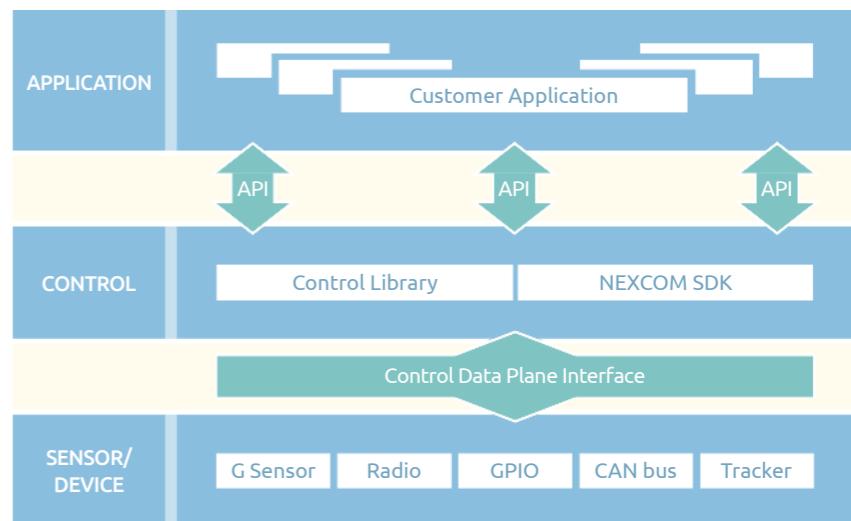
Figure 1. New technologies spring up to build a concrete foundation for interconnected IoV and value-added innovation

Solid Technical Capability to Bring Benefits to Customers

- Over 20 years of experience in designing rugged devices and over 10 years in designing vehicle/railway computers
- Long distance high-quality video content delivery
- Low cost and easy maintenance with single cable (video/USB/audio/power) design
- Fanless design and IP67 protection for extreme environmental conditions
- IK08 impact resistance on external mechanics
- Profound expertise and extensive hand-on experience in CAN/SAE J1939/SAE J1708
- Familiar with CISPR25 standard
- Smart in-vehicle UPS design for uninterrupted operation

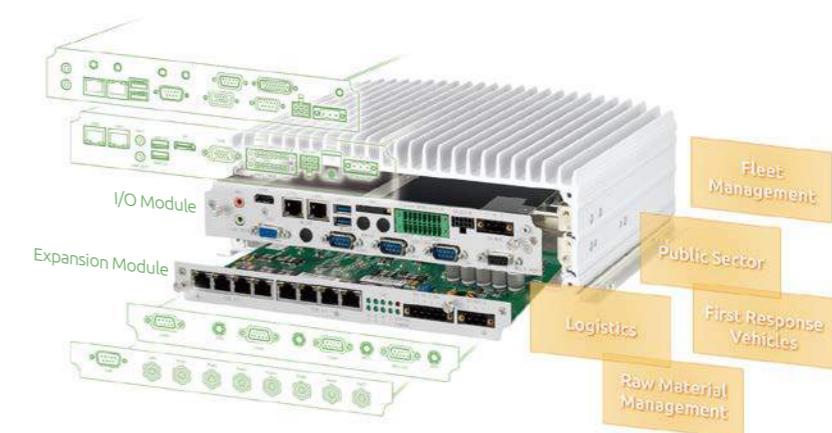
Software Development Support

- Rich experience in supporting Linux, Android and Windows OS
- SDK supports for Linux, Android and Windows OS
- Provide utility and sample code for API usage and programming guide for user to customize their software



Quick OEM/ODM Customized Service

- MVS Express Service with fast customized modular design
- Validation including reliability, functionality, and environment test
- Certification application
- Dedicated team for system configuration and integration



Internet of Vehicles (IoV) -

Creating a Fully - Encompassing Car Ecosystem Through
IoV Innovation



NEXCOM's Product Line

- Vehicle Telematics Computer
- Vehicle Mount Computer
- Modular Vehicle Computer System
- Advanced Telematics Computer
- Vehicle Mount Display
- Railway Computer
- Mobile NVR
- In-Vehicle Networking



Autonomous Driving -

Deep Learning Makes the Autonomous Car Perceptive and Practical

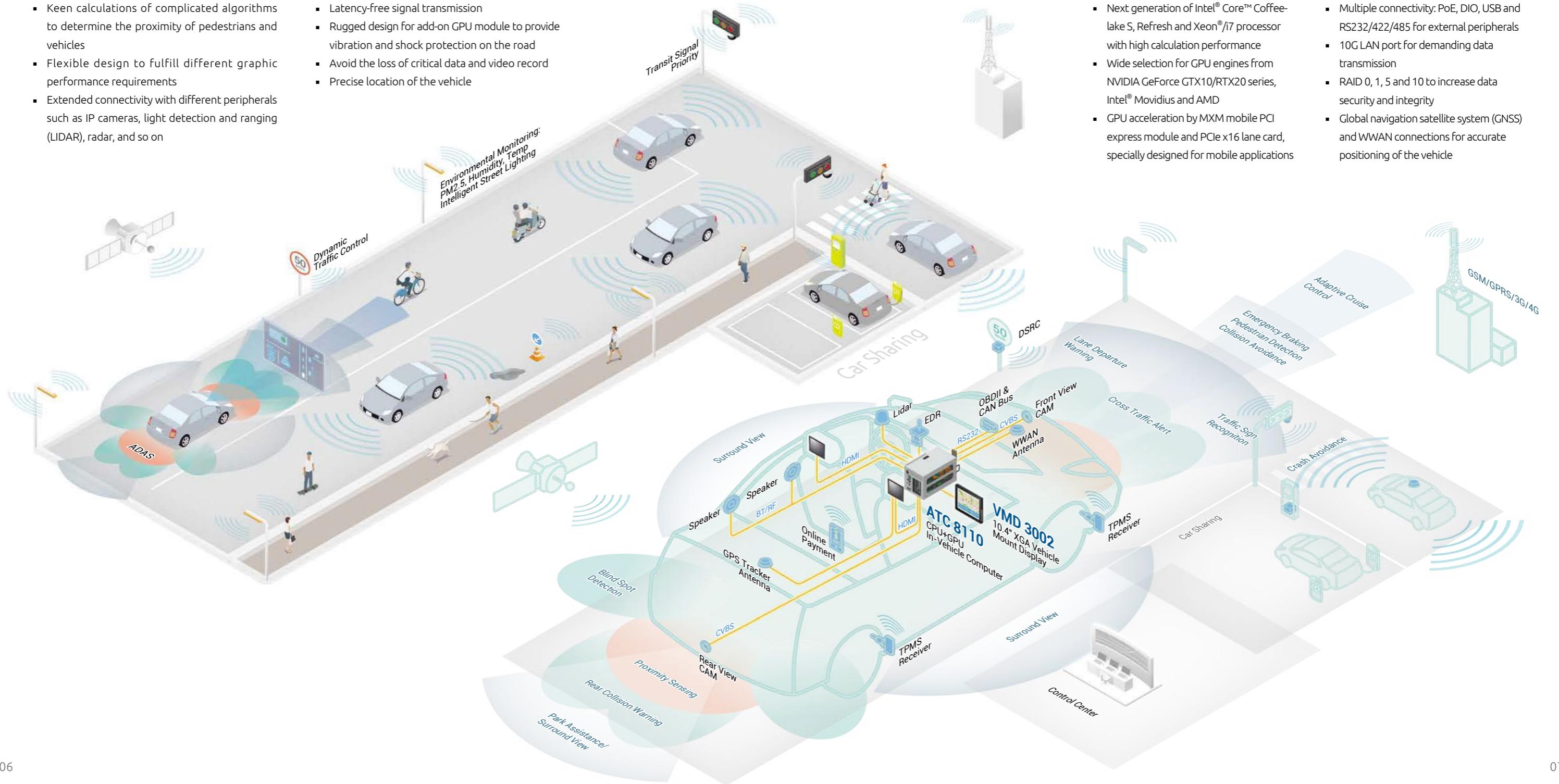
Recommended Products

- ATC 8010
- ATC 8110
- MVS 5600
- MVS 5603
- VTC 7240
- VTC 7250
- VMD 1001
- VMD 2002
- VMD 2003
- VMD 3002
- VMD 3110



Key Requirements

- Keen calculations of complicated algorithms to determine the proximity of pedestrians and vehicles
- Flexible design to fulfill different graphic performance requirements
- Extended connectivity with different peripherals such as IP cameras, light detection and ranging (LIDAR), radar, and so on
- Latency-free signal transmission
- Rugged design for add-on GPU module to provide vibration and shock protection on the road
- Avoid the loss of critical data and video record
- Precise location of the vehicle



NEXCOM's Solutions

- Next generation of Intel® Core™ Coffee-lake S, Refresh and Xeon®/i7 processor with high calculation performance
- Wide selection for GPU engines from NVIDIA GeForce GTX10/RTX20 series, Intel® Movidius and AMD
- GPU acceleration by MXM mobile PCI express module and PCIe x16 lane card, specially designed for mobile applications
- Multiple connectivity: PoE, DIO, USB and RS232/422/485 for external peripherals
- 10G LAN port for demanding data transmission
- RAID 0, 1, 5 and 10 to increase data security and integrity
- Global navigation satellite system (GNSS) and WWAN connections for accurate positioning of the vehicle

Smart Public Transit -

Smart Bus Ride to a Safe, Green, Fun and Comfortable Tomorrow

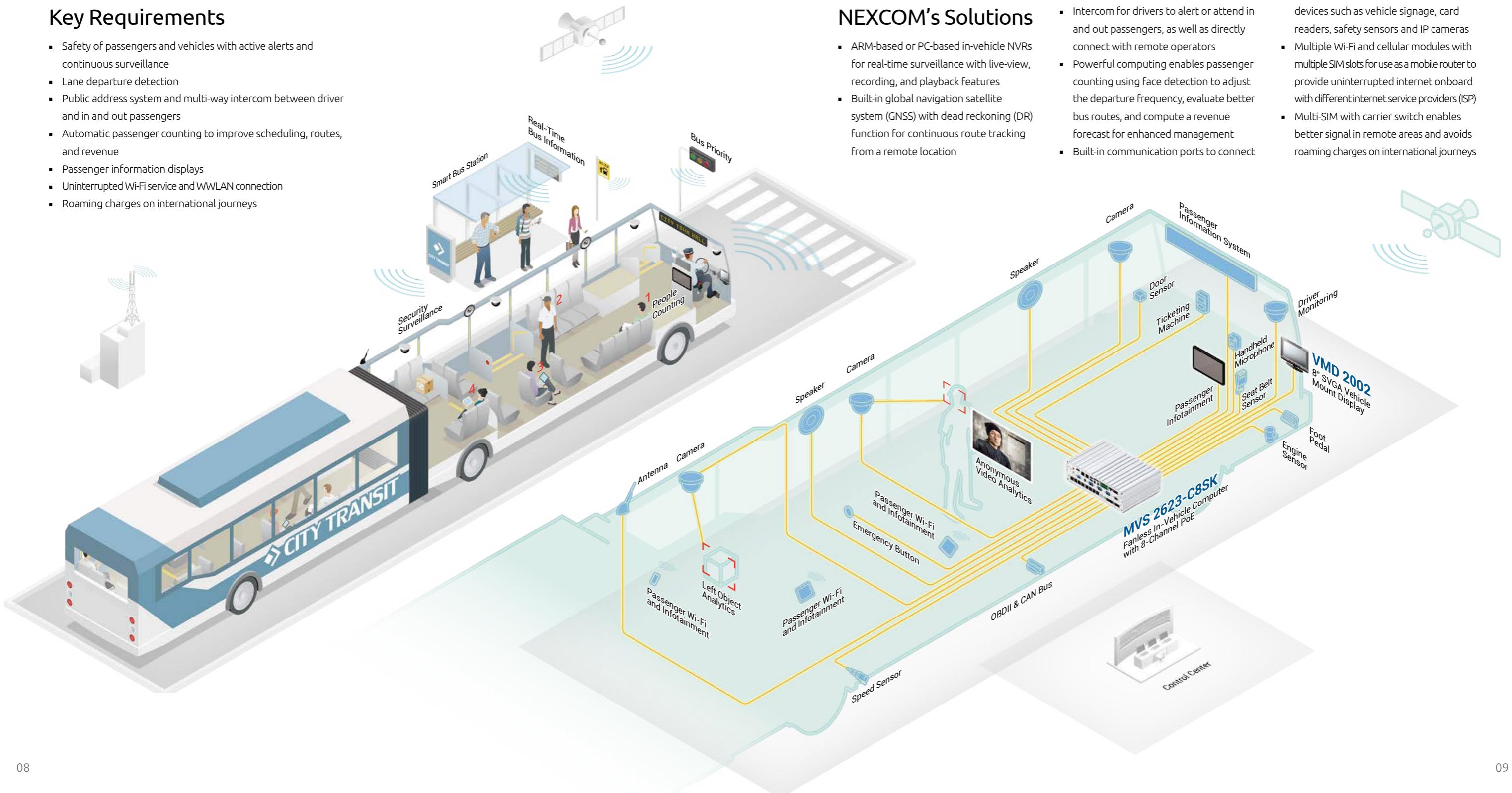
Recommended Products

- VTC 1010
- VTC 1011
- VTC 1020-PA
- VTC 1021
- VTC 1220
- VTC 6210
- VTC 6220
- MVS 2623
- MVS 5603
- VMD 1001
- VMD 2002
- VMD 2003
- VMD 3002
- VMD 3110



Key Requirements

- Safety of passengers and vehicles with active alerts and continuous surveillance
- Lane departure detection
- Public address system and multi-way intercom between driver and in and out passengers
- Automatic passenger counting to improve scheduling, routes, and revenue
- Passenger information displays
- Uninterrupted Wi-Fi service and WWLAN connection
- Roaming charges on international journeys



Smart Public Transit on Railways -

Railway Telematics for Transport Security, Efficiency and Passenger Satisfaction

Recommended Products

- VTC 6210-R
- VTC 7220-R
- MVS 5210-R
- VES 30
- nROK 1020
- nROK 1220
- nROK 3220
- nROK 5300
- nROK 5500
- nROK 6221
- VMC 3020
- VMD 1001
- VMD 2002
- VMD 3002



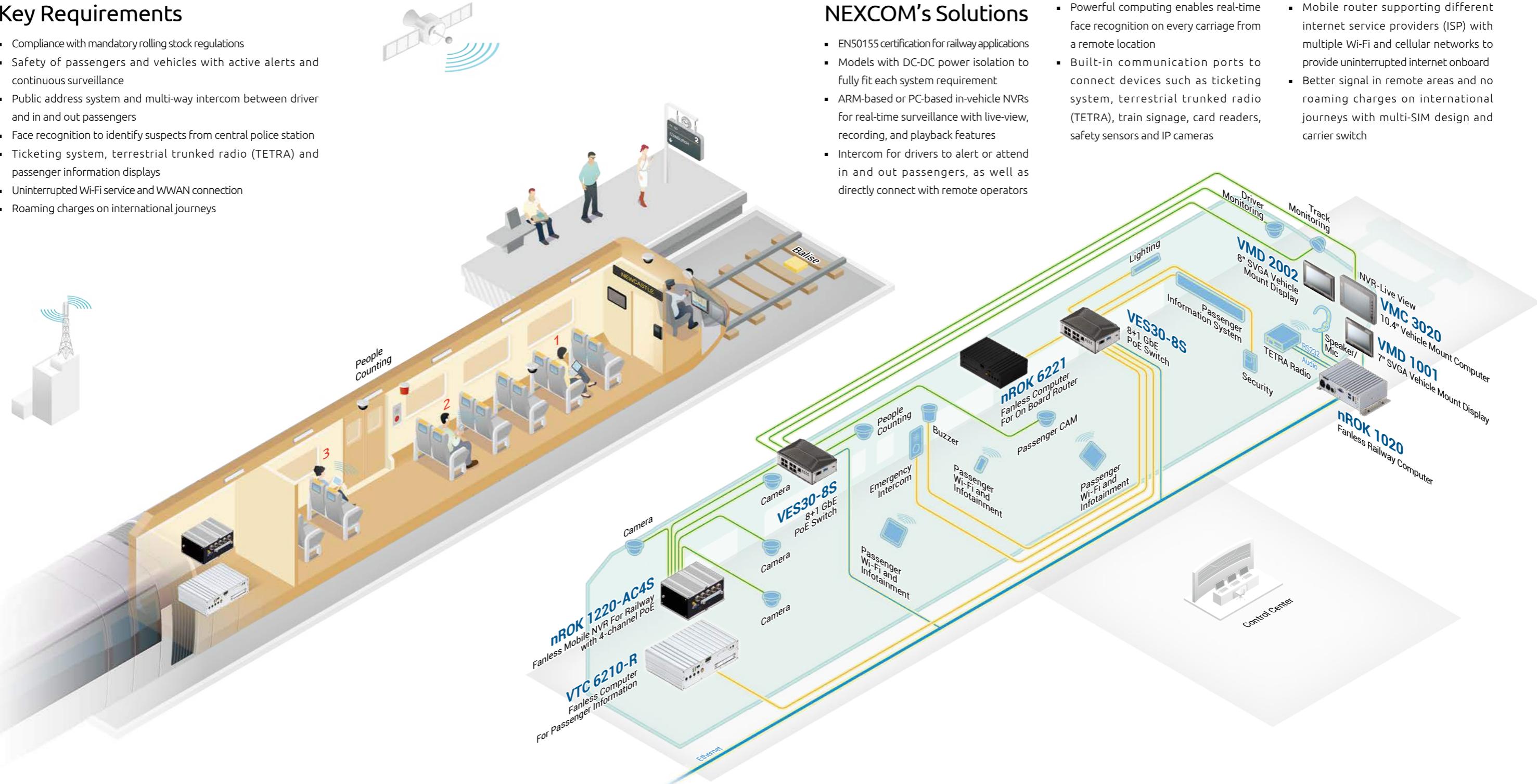
Key Requirements

- Compliance with mandatory rolling stock regulations
- Safety of passengers and vehicles with active alerts and continuous surveillance
- Public address system and multi-way intercom between driver and in and out passengers
- Face recognition to identify suspects from central police station
- Ticketing system, terrestrial trunked radio (TETRA) and passenger information displays
- Uninterrupted Wi-Fi service and WWAN connection
- Roaming charges on international journeys



NEXCOM's Solutions

- EN50155 certification for railway applications
- Models with DC-DC power isolation to fully fit each system requirement
- ARM-based or PC-based in-vehicle NVRs for real-time surveillance with live-view, recording, and playback features
- Intercom for drivers to alert or attend in and out passengers, as well as directly connect with remote operators
- Powerful computing enables real-time face recognition on every carriage from a remote location
- Mobile router supporting different internet service providers (ISP) with multiple Wi-Fi and cellular networks to provide uninterrupted internet onboard
- Better signal in remote areas and no roaming charges on international journeys with multi-SIM design and carrier switch

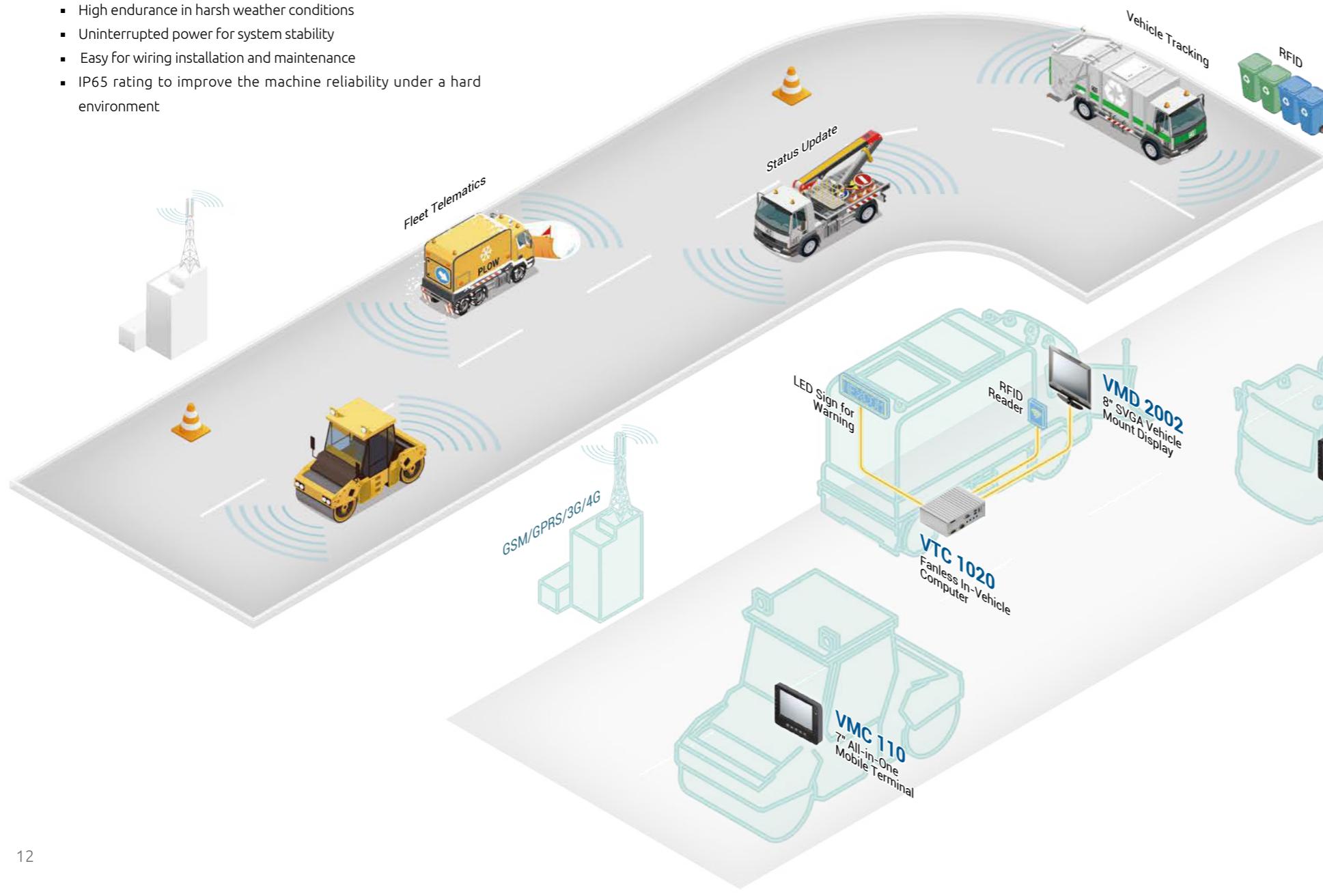


Public Works -

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

Key Requirements

- Power and cost efficiency
- Wireless communication to bring IoT into reality
- Rich I/O interface to connect with a variety of sensors
- Robust design for outdoor in-vehicle computing applications
- Compact size to fit in cabins with limited space
- Precise and real-time location of the vehicle
- High endurance in harsh weather conditions
- Uninterrupted power for system stability
- Easy for wiring installation and maintenance
- IP65 rating to improve the machine reliability under a hard environment



Recommended Products

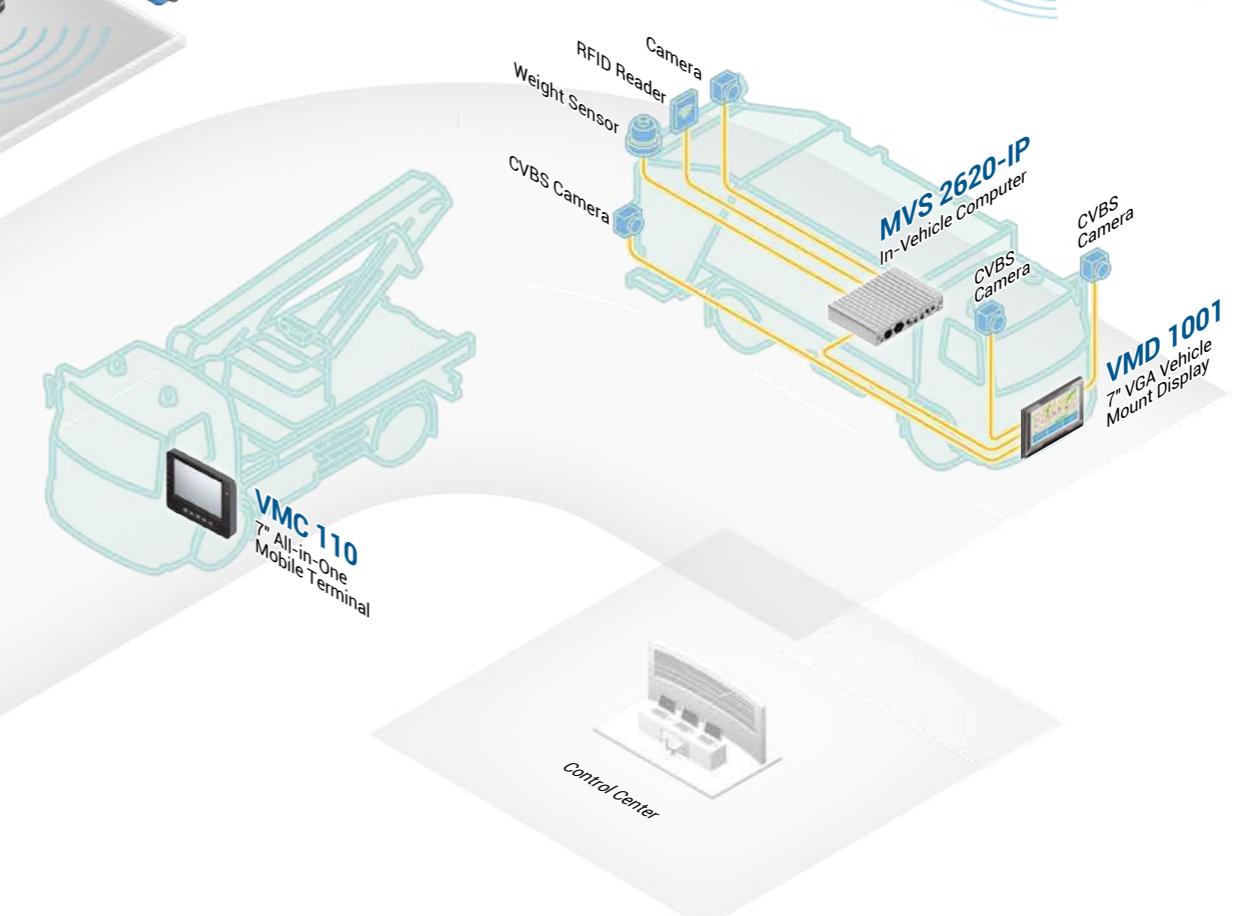
- | | | |
|------------|---------------|------------|
| - VTC 1010 | - VTC 6210 | - VMD 1001 |
| - VTC 1011 | - VTC 6220 | - VMD 2002 |
| - VTC 1020 | - VMC 110 | - VMD 2003 |
| - VTC 1021 | - VMC 1100 | - VMD 3002 |
| - VTC 1910 | - MVS 2620-IP | - VMD 3110 |
| - VTC 1911 | | |



NEXCOM's Solutions

- The most diverse line of vehicle computers powered by Intel® processors for fast and strenuous work
- GNSS tracking and WLAN/WWAN communication with multi-SIM capabilities

- Built-in communication ports such as USB/COM/GPIO/CAN bus/mini PCIe to connect peripherals and acquire relevant data
- Rugged design compact size and IP65 protection for reliable operation in extreme and outdoor environments
- Extended operating temperature range from -40°C to 70°C
- Optional backup battery ensures consistent operation regardless of unstable power supply to support continuous operational and management improvements
- ultraONE+ technology supports 10-meter video transmission over a single cable

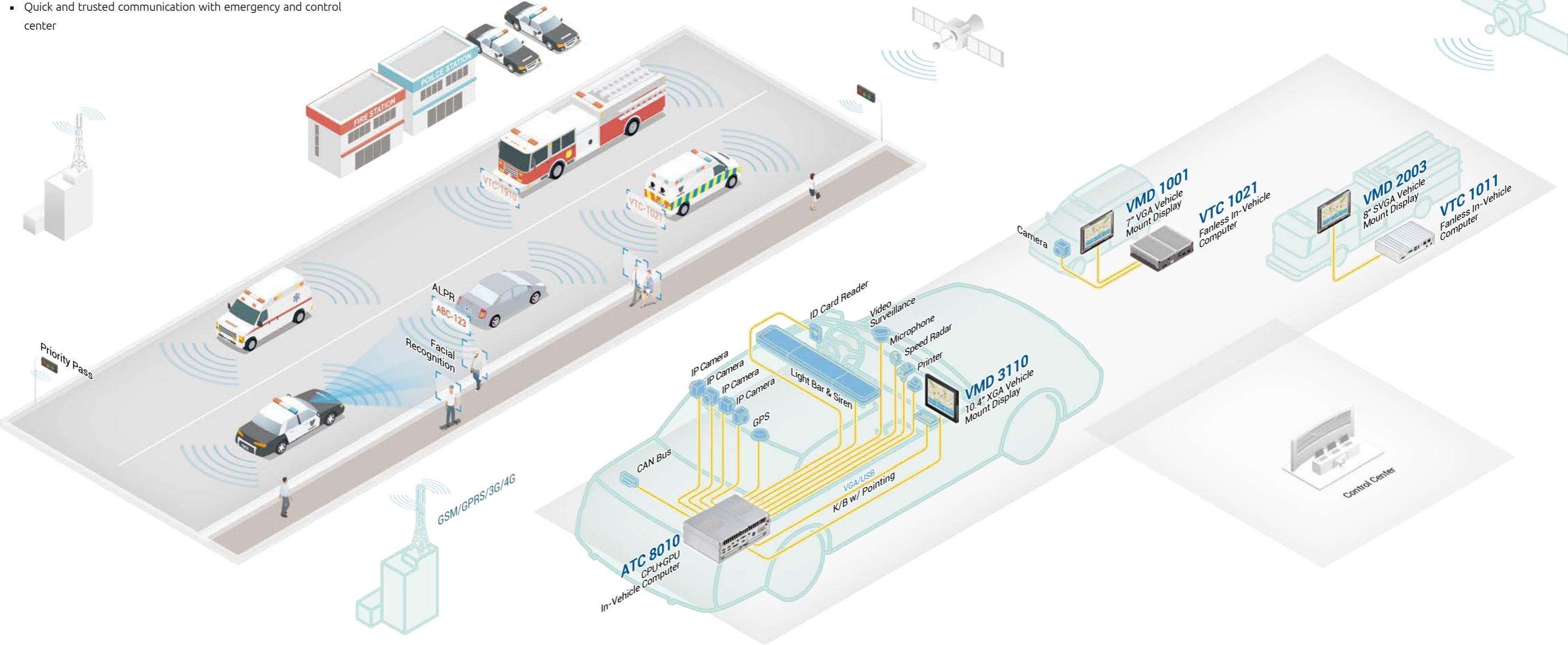


First Response Vehicles -

Leak-Free Crime Recognition and Trusted Emergency Service All Day Long

Key Requirements

- Ability to aggregate video feeds from multiple IP cameras
- High graphic performance for sophisticated image processing (facial recognition, ANPR)
- Real-time surveillance on multiple video displays
- Easy system installation to fit in vehicles with limited space
- Real-time vehicle status monitoring
- Prompt emergency-mission dispatching with the most optimal route for the destination
- Quick and trusted communication with emergency and control center
- Uninterrupted power supply to systems
- Display and system integration for large trucks with simplified cabling
- All-in-one PoE design to lower total cost of ownership (TCO) and facilitate maintenance
- High-speed storage is possible for high-speed multi-CAM



Recommended Products

- | | | | |
|------------|---------------|------------|------------|
| - VMD 1001 | - ATC 8010 | - VTC 1010 | - VTC 6210 |
| - VMD 2002 | - ATC 8110 | - VTC 1011 | - VTC 6220 |
| - VMD 2003 | - MVS 2623 | - VTC 1021 | - VTC 7230 |
| - VMD 3002 | - MVS 5600-IP | | - VTC 7240 |
| - VMD 3110 | - MVS 5603 | | - VTC 7250 |

NEXCOM's Solutions

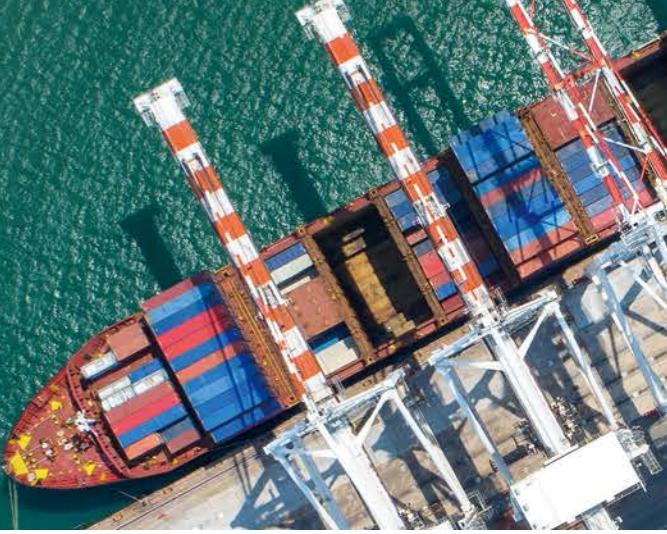
- 360-degree view from up to 8 IP cameras over PoE ports
- Fast automatic license plate recognition (ALPR) and face detection powered by Intel® Coffee-lake S, Refresh, Xeon®/i7 high performance processor and NVIDIA GeForce® RTX2080Ti/GTX 1050Ti/1080 graphics card
- CAN bus 2.0B to read the vehicle status accurately and quickly
- Vehicle mount computer to show the job assignments and route map
- Support multiple telecom carriers (3G and
- ultraONE+ technology to solve the cabling issue and video signal degradation in harsh vehicle operating environments over a single cable
- Backup battery ensures uninterrupted system operation
- Supporting PoE 802.3 af/at for IP cameras and other devices
- LTE to guarantee the communication and data transmission between the vehicle and control center

Port Management & Warehouse -

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

Recommended Products

- VMC 110
- VMC 111
- VMC 1100
- VMC 3020
- VMC 3021
- VMC 4020
- VMD 2002

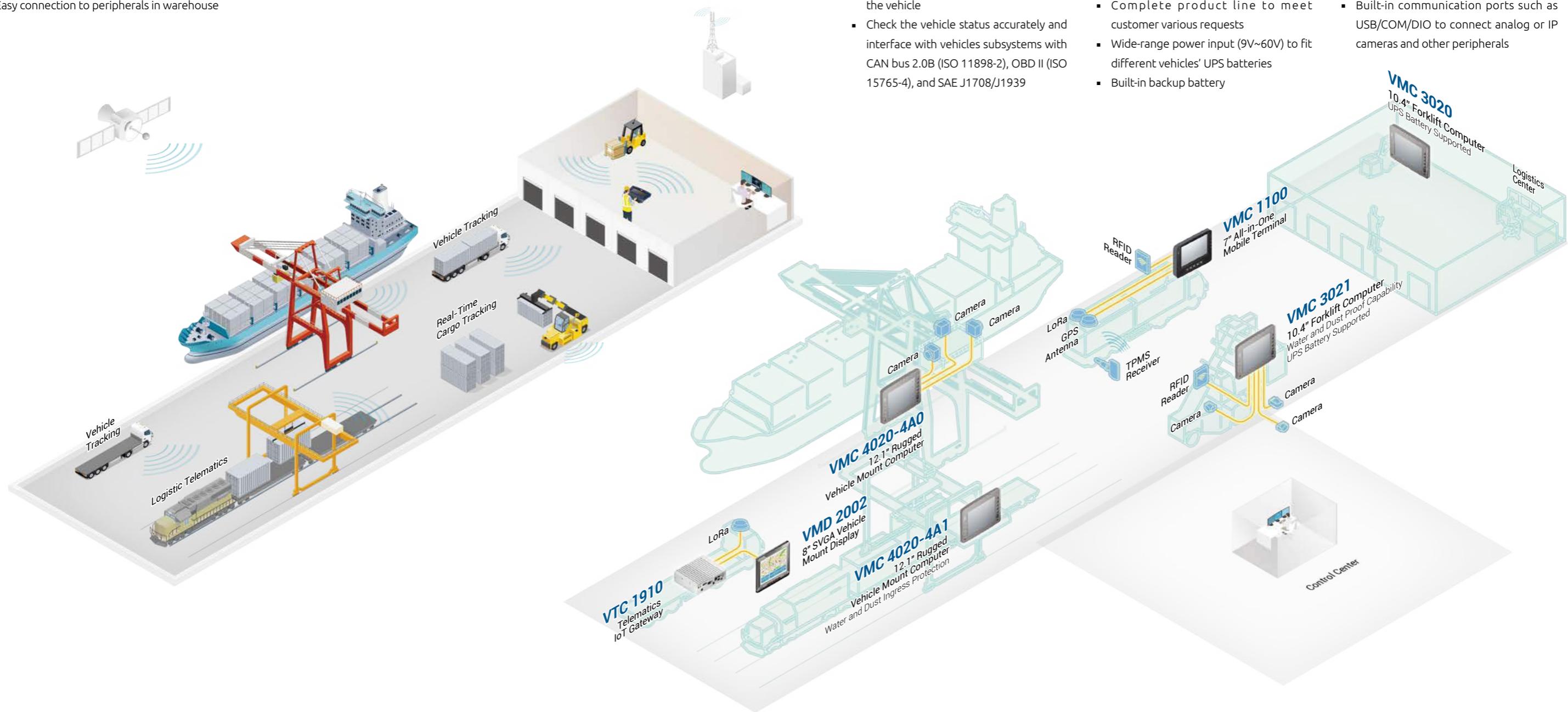


Key Requirements

- Sunlight readable display
- Precise and real-time location of the vehicle
- Real-time vehicle status monitoring
- Reliable operation in extreme weather conditions
- Diverse OS support
- Easy connection to peripherals in warehouse
- Compact size to fit in space-limited cabins in gantry cranes and forklifts of all sizes
- Non-stop working operation regardless vehicle's battery level
- Proximity sensing to ensure safe operation
- Uninterrupted power supply for stable system performance

NEXCOM's Solutions

- High-brightness LCD touchscreen panel with low reflection
- Global navigation satellite system (GPS/Glonass/Galileo/BeiDou) and WWAN connections for accurate positioning of the vehicle
- Check the vehicle status accurately and interface with vehicles subsystems with CAN bus 2.0B (ISO 11898-2), OBD II (ISO 15765-4), and SAE J1708/J1939
- Aluminum die casting housing and touch-heater to alleviate the huge fluctuation of temperature and humidity
- Powerful USB and COM for connected peripherals
- Complete product line to meet customer various requests
- Wide-range power input (9V~60V) to fit different vehicles' UPS batteries
- Built-in backup battery
- Optional backup battery ensures that data critical to operational and management improvements is stored and streamed to the cloud despite unstable power supply
- Built-in communication ports such as USB/COM/DIO to connect analog or IP cameras and other peripherals



Fleet Management -

Improving Driver Safety, Save Energy, and Increase Overall Fleet Efficiency

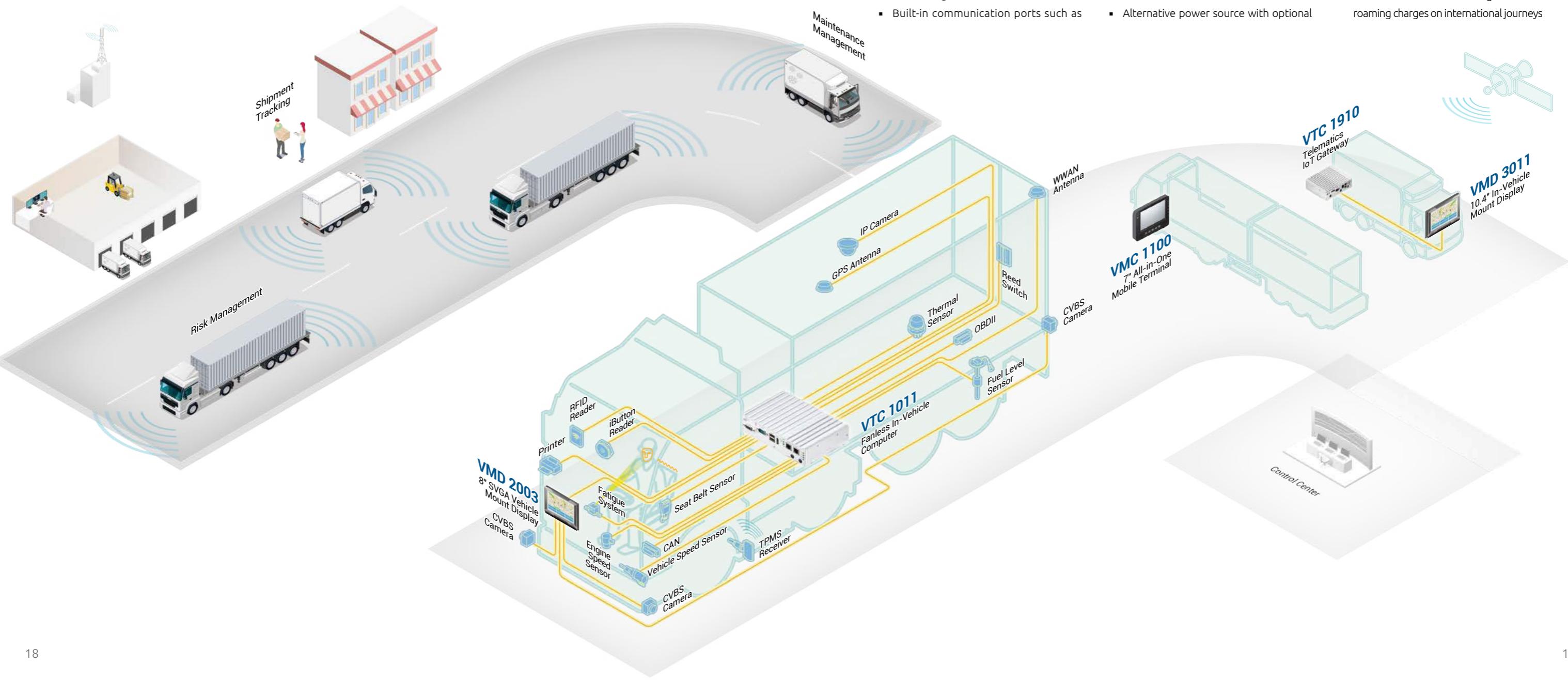
Recommended Products

- VTC 1910
- VTC 1911
- VTC 1011
- VTC 1020
- VMC 110/111
- VMC 1100
- VMD 1001
- VMD 2002
- VMD 2003
- VMD 3002
- VMD 3110



Key Requirements

- Power and cost effective
- Real-time vehicle status monitoring
- Plan routes more correctly and real-time location of the vehicle
- Rich I/O interface to connect with a variety of sensors
- Suitable for harsh environments
- Uninterrupted power supply for stable system operation
- 360-degree situational awareness to enhance driving safety
- Roaming charges on international journeys



NEXCOM's Solutions

- Powered by Intel® processors for fast and strenuous work
- VGA/HDMI/ultraONE+ various display support
- GPS and WLAN/WWAN module support for tracking and communication
- Built-in communication ports such as USB/ COM/GPIO/CAN bus/mini-Pcie to connect peripherals and acquire vehicle data
- Rugged design and IP65 protection for reliable operation in extreme and outdoor environments
- Alternative power source with optional backup battery to ensure uninterrupted data storage and transmission regardless of unstable vehicle power
- Powerful CVBS design for blind spot monitoring and collision avoidance
- SIM card switch for better signal and no roaming charges on international journeys

Raw Material Management -

Born Tough to Increase Efficiency and Productivity

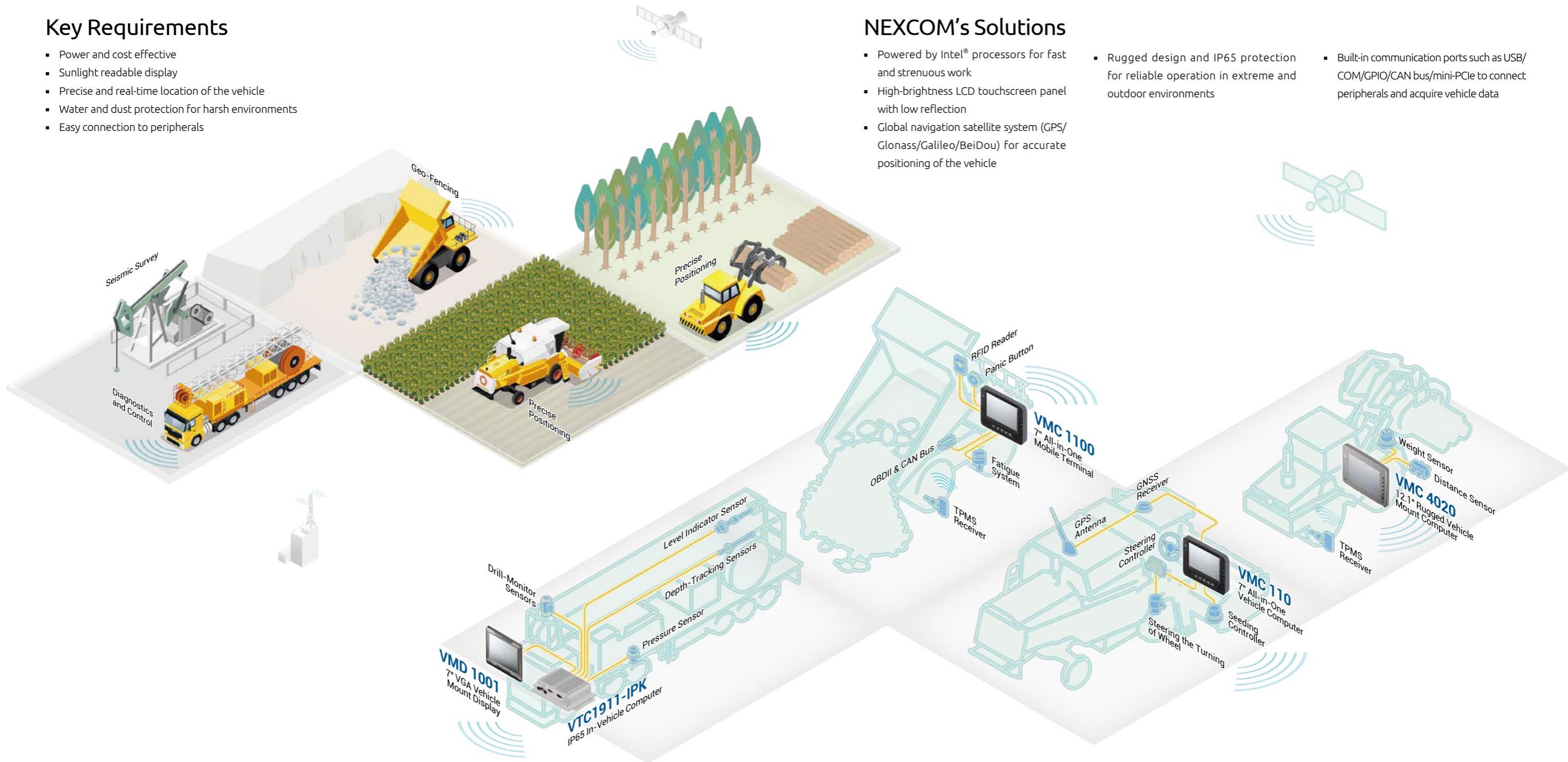
Recommended Products

- VMD 1001
- VTC 1911
- VMC 1100
- VMD 2002
- MVS 2620-IP
- VMC 3020
- VMD 2003
- MVS 5600-IP
- VMC 3021
- VMD 3002
- VMC 4020



Key Requirements

- Power and cost effective
- Sunlight readable display
- Precise and real-time location of the vehicle
- Water and dust protection for harsh environments
- Easy connection to peripherals



NEXCOM's Solutions

- Powered by Intel® processors for fast and strenuous work
- High-brightness LCD touchscreen panel with low reflection
- Global navigation satellite system (GPS/Glonass/Galileo/BeiDou) for accurate positioning of the vehicle
- Rugged design and IP65 protection for reliable operation in extreme and outdoor environments
- Built-in communication ports such as USB/COM/GPIO/CAN bus/mini PCIe to connect peripherals and acquire vehicle data

Video Surveillance -

To See, to Analyze, to Real-Time React for Mobile Security

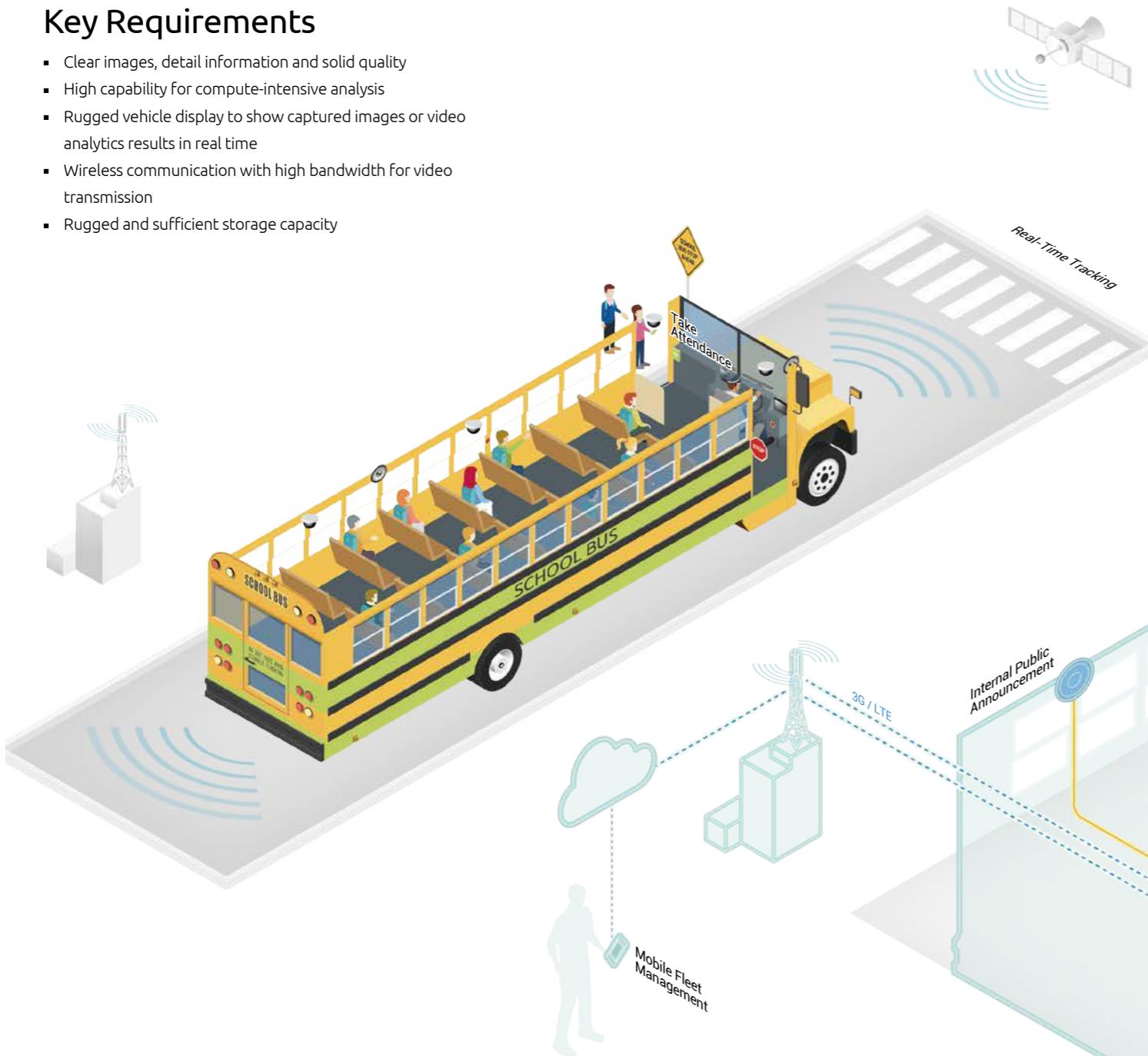
Recommended Products

- VTC 1011
- VTC 1021
- VTC 1220
- VTC 6210-VR4
- VTC 6220
- VTC 7250
- MVS 2623
- MVS 5200
- MVS 5210
- MVS 5603
- VMD 1001
- VMD 2002
- VMD 2003
- VMD 3002
- VMD 3110



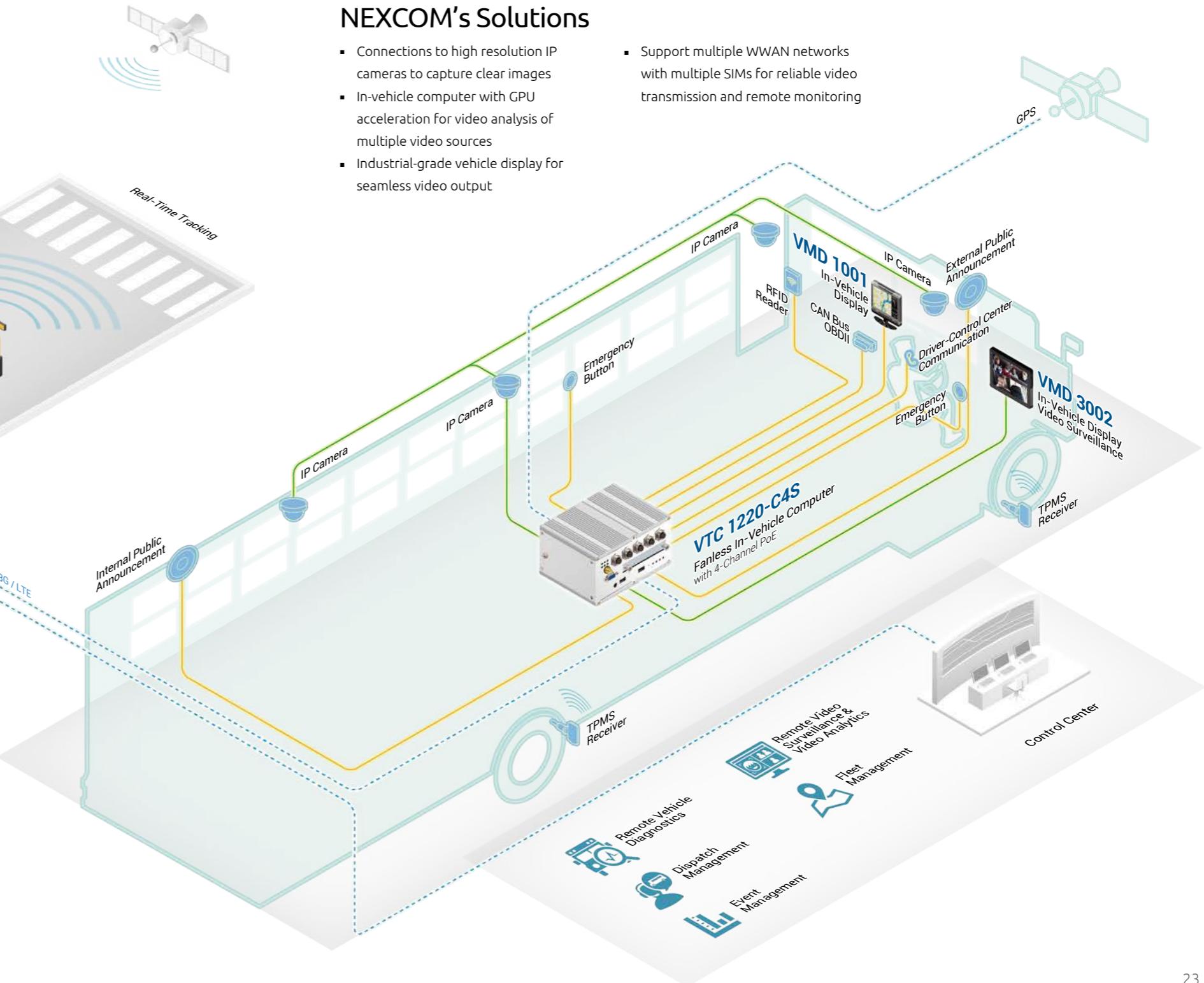
Key Requirements

- Clear images, detail information and solid quality
- High capability for compute-intensive analysis
- Rugged vehicle display to show captured images or video analytics results in real time
- Wireless communication with high bandwidth for video transmission
- Rugged and sufficient storage capacity



NEXCOM's Solutions

- Connections to high resolution IP cameras to capture clear images
- In-vehicle computer with GPU acceleration for video analysis of multiple video sources
- Industrial-grade vehicle display for seamless video output
- Support multiple WWAN networks with multiple SIMs for reliable video transmission and remote monitoring



Product Selection Guide

VTC/MVS/ATC System

CPU	COM				CAN Bus			Video Output				M.2	mini-Pcie	IP65	Model
Intel® Core™	RS232	RS485	RS232/422/485	RS422/485	CAN 2.0B	OBD	DP	VGA	ultraONE+	LVDS	HDMI	Quantity	Quantity		
	2 x Full			1	1	*	V	V				4			VTC 1010
	2 x Full, 1x Tx/Rx				1	*		V		O	V	2			VTC 1011-C2K
	2 x Full, 1x Tx/Rx				1	*		V	V		V	2			VTC 1011-C2VK
	5 x Tx/Rx	2			1	*		V		V	V	2			VTC 1020
	5 x Tx/Rx	2			1	*		V		V	V	2			VTC 1020-PA
	1 x Full, 1x Tx/Rx			1	1	*		V		V	V	3			VTC 1021
	2 x Tx/Rx	1			1	*		V				2			VTC 1910-S
	2 x Tx/Rx	1			1	*		V		O	O	2	V		VTC 1911-IPK
	2 x Full			1	1	*	V	V				4			VTC 6210-BK
	2 x Full			1	1	*	V	V				4			VTC 6210-VR4
	2 x Full			1	1	*		V	O	O	V	1+1xO	3+1xO		VTC 6220-BK
	1 x Full, 1x Tx/Rx	1			1			V			V	1	4		VTC 6221
	1 x Full, 1x Tx/Rx			1	1			V			V	3			VTC 6222-C4S
	2 x Full		1		1	*		V			V	3			MVS 2623-C8SK
	2 x Full		1		1	*		V			V		4		MVS 2623-C6SMK
	2 x Full, 1x Tx/Rx	2			1 (Isolation)	*		V				4	V		MVS 2620-IPK
	2 x Full		1		1	*	V	V		V		4			VTC 7200
	2 x Full		1		1	*	V	V		V		4			VTC 7210
	2 x Full		1		1	*	V	V		V		4			VTC 7220
	2 x Full		1		1	*	V	V		V		4			VTC 7230
	2 x Full		1		1	*	V	V		V		4			VTC 7240
	2 x Full		2		1 (Isolation)			V	V		V	1+1xO	3		VTC 7250-7C8
	N/A		2		1	*		V		V			3		MVS 5200-BK
	N//A		2		1	*		V		V			3		MVS 5210-BK
	2 x Full		1		1	*		V			V		3		MVS 5603-xC8SK
	2 x Full		1		1	*		V			V	1	4		MVS 5603-xC6SMK
	2 x Full		1		1	*		V			V	3			MVS5600-xBK
	2 x Full, 1x Tx/Rx	2			1 (Isolation)	*		V				4	V		MVS 5600-xIPK
	2 x Full		2		1 (Isolation)			V	V		V	1+1xO	3		ATC 8010
	N/A		4		1 (Isolation)	*		V			V	2	2		ATC 8110

*: Optional module available O: Optional S: Selectable

Railway Computer

Power Input (M12)		# of PoE		Ethernet	CPU		Audio	USB	Model
24V	DC	With Isolation	10/100/1000 (M12)		10/100/1000 (M12)		Intel Atom®	Intel® Core™	(M12)
				8	2		V		nROK 5300
				8	2		V		nROK 5500
					2	V			nROK 6221
		None			2	V			nROK 6221-IP
					2		V		VTC 7220-RA
						1	V	V	nROK 1020-A
					2	V			nROK 6221
36V		With Isolation			2	V			V
					2	V			nROK 6221-IP
				4	1	V			nROK 6222-AC4S
					2	V			VTC 6210-RA
		None			8	2	V	V	MVS 5210-RA
						8	2		nROK 5300
					8	2			nROK 5500
					2		V		VTC 7220-RB
48V		With Isolation			2	V			VTC 6210-RA *
						8	2	V	nROK 5300
						8	2	V	nROK 5500
					2		V		VTC 7220-RC *
		None				8	2	V	nROK 5300
						8	2	V	nROK 5500
					3	V			nROK 3220
					8	2		V	nROK 5300
110V		With Isolation			8	2	V	V	nROK 5500
						2	V		nROK 6221
						2	V		nROK 6221-IP
						2	V		VTC 6210-RF
		None				2		V	VTC 7220-RF
					8	2	V	V	MVS 5210-RF

*: Compliant

Vehicle Mount Computer

LCD Size	CPU		Touch Screen	COM				IP Protection			Model
	Arm®	Intel Atom®	Resistive Touch	RS232	RS485	RS232/422/485	RS232/485	Front Panel IP54	Front Panel IP65	IP65 (Enclosure)	
7"	V		V	1 x Full				1	V		VMC 110/111
		V	V	1 x Full, S	S				V		VMC 1100
10.4"		V	V	2 x Full, 1 x Tx/Rx					V		VMC 3020
		V	V			2			V		VMC3021-4A1
12.1"		V	V			2			V		VMC4020-4A1
		V	V			2			V		VMC4020-4A0

S: Selectable

Vehicle Mount Display

LCD Size	Video Input				Touch Screen		Brightness				Touch Interface	Model
	VGA	LVDS	CVBS	ultraONE+	Resistive Touch	PCAP	400 cd/m ² (Typ.)	500 cd/m ² (Typ.)	1000 cd/m ² (Typ.)	1200 cd/m ² (Typ.)	USB	
7"	V				V			V			V	VMD 1000
	V				V			V			V	VMD 1001
8"	V				V		V				V	VMD 2000
	V				V		V				V	VMD 2002
10.4"		4	V	V			V				V	VMD 2003
	V	4			V				V	V	V	VMD 3002
		4	V	V					V	V	V	VMD 3110

PoE Port

# of PoE	Power Output			Ethernet					Storage		Model	
	30W	60W	120W	1	2	3	Intel Atom®	Intel® Core™	2	3	4	
1	O			V			V		V			VMC 3021-4A1
	O			V			V		V			VMC 4020-4A1
	O			V			V		V			VMC 4020-4A0
2	V				V		V		V			VTC 1011
	V			V			V		V			VTC 1021-C2K
	O				V	V			V			VTC 6220
4	V		V									VES 30-4S
	V		V		V				V			nROK 6222-AC4S
	V		V		V				V			VTC 6222-C4S
6	V			V			V		V			MVS 5603-xC6SMK
	V			V			V		V			MVS 2623-C6SMK
8	V			V			V		V			nROK 5300
	V			V			V		V			nROK 5500
	V			V			V		V			MVS 5210-R
		V	V									VES 30-8S
	V			V			V		V			MVS 5200
	V			V			V		V			MVS 5210
	V			V			V		V			MVS2623-C8SK
	V			V			V		V			MVS 5603-xC8SK
	V			V			V		V			VTC 7250-7C8
	V			V			V		V			ATC 8010
	2 x O			V			V		V			ATC 8110

O: Optional

Product Selection Tables**Vehicle Telematics Computer**

Model	VTC 1011-C2K	VTC 1011-C2VK	VTC 1020	VTC 1020-PA
CPU	Intel Atom® E3825	Intel Atom® E3825	Intel Atom® x5-E3930	Intel Atom® x5-E3930
Chipset	N/A	N/A	N/A	N/A
Memory	2GB DDR3L SO-DIMM (default) up to 8GB	2GB DDR3L SO-DIMM (default) up to 8GB	4GB DDR3L SO-DIMM (default) up to 8GB	4GB DDR3L SO-DIMM (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 3.0 SSD (9.5mm)	1 x 2.5" SATA 3.0 SSD (15mm)
Second Storage	1 x mSATA	1 x mSATA	1 x mSATA	1 x mSATA
Dimensions (mm)	185 x 150.9 x 45	185 x 150.9 x 45	185 x 120 x 45	185 x 120 x 50
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Ignition Control	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Power Management	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
GPS	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)
Optional Communication	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN
Voice	Yes	Yes	Yes	Yes
SIM Socket	2	2	1	1
USB	2 x USB 2.0	2 x USB 2.0	2 x USB 3.0	2 x USB 3.0
COM	2 x RS232, 1 x RS232 (Tx/Rx) or RS422/485	2 x RS232, 1 x RS232 (Tx/Rx) or RS422/485	5 x RS232 (Tx/Rx), 2 x RS485	5 x RS232 (Tx/Rx), 2 x RS485
CAN/OBD	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module
Video Out	VGA, HDMI	VGA, HDMI or ultraONE+	VGA, HDMI	VGA, HDMI or LVDS
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
PoE	2 x (802.3af/at). Total 30W	2 x (802.3af/at). Total 30W	N/A	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	1 x Mic-in, 3 x Line-out (selectable)
mini-Pcie Socket	1 x (PCIe+USB 2.0+mSATA), 1 x USB 2.0	1 x (PCIe+USB 2.0+mSATA), 1 x USB 2.0	1 x (PCIe+USB 2.0+mSATA), 1 x USB 2.0	1 x (PCIe+USB 2.0+mSATA), 1 x USB 2.0
M.2 Socket	N/A	N/A	N/A	N/A
SMBus	1	1	1	1
DC Output	12V (2A)	12V (2A)	12V (2A)	12V (2A)
GPIO	4 x In, 4 x Out	4 x In, 4 x Out	5 x Programmable GPIO	5 x Programmable GPIO
Ingress Protection	N/A	N/A	N/A	N/A
Back Up Battery	N/A	N/A	N/A	N/A
Certification	CE, FCC Class A, E13	CE, FCC Class A, E13	CE, FCC Class A, E13	CE, FCC Class A, E13
OS	Win 10, Win 8, Win 7, WES 7, Linux (kernel 3.x)	Win 10, Win 8, Win 7, WES 7, Linux (kernel 3.x)	Win 10 64-bit, Linux, YOCTO (by request)	Win 10 64-bit, Linux, YOCTO (by request)
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

Vehicle Telematics Computer

Model	    	    								
	VTC 1010	VTC1021-BK	VTC1021-C2K	VTC 1910-S	VTC 1911-IPK	VTC 6210-BK	VTC 6210-VR4	VTC 6220-BK	VTC 6221	VTC 6222-C4S
CPU	Intel Atom® E3827	Intel Atom® x5-E3940	Intel Atom® x5-E3940	Intel Atom® E3815	Intel Atom® E3815	Intel Atom® E3845	Intel Atom® E3845	Intel Atom® x7-E3950	Intel Atom® x7-E3950	Intel Atom® x7-E3950
Chipset	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Memory	2GB DDR3L 1066/1333 SO-DIMM (default) up to 8GB	4GB DDR3L SO-DIMM (default) up to 8GB	4GB DDR3L SO-DIMM (default) up to 8GB	2GB DDR3L SO-DIMM (default) up to 8GB	2GB DDR3L SO-DIMM (default) up to 8GB	2GB DDR3L 1066/1333 SO-DIMM (default) up to 8GB	2GB DDR3L 1066/1333 SO-DIMM (default) up to 8GB	4GB DDR3L SO-DIMM (default) up to 8GB	4GB DDR3L 1333 SO-DIMM (default) up to 8GB	4GB DDR3L SO-DIMM (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)	1 x SATA 2.0 mSATA	1 x SATA 2.0 mSATA	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)	1 x 2.5" SATA 3.0 SSD (removable, 9.5mm)	1 x 2.5" SATA 3.0 SSD (removable, 15mm)
Second Storage	1 x SD (external accessible)	1 x mSATA	1 x mSATA	1 x SATA DOM	1 x 2.5" SSD (9.5mm) or 1 x SATA DOM	1 x CFast (external accessible)	1 x CFast (external accessible)	N/A	1 x CFast (external accessible). mSATA (BOM option)	1 x CFast, 1 x SD (external accessible)
Dimensions (mm)	180 x 180 x 50	180 x 180 x 50	180 x 180 x 50	130 x 120 x 35	185 x 167 x 56.5	260 x 176 x 50	260 x 176 x 50	260 x 196 x 50	260 x 196 x 50	165 x 137.6 x 82.5
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Ignition Control	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Power Management	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
GPS	VIOB-GPS-02 module (u-blox NEO-M8N)	On board u-blox NEO-M8N	On board u-blox NEO-M8N	On board u-blox NEO-M8N	On board u-blox NEO-M8N	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)			
Optional Communication	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN
Voice	Yes	Yes	Yes	Yes, (w/ VIOB-DA-01)	Yes	Yes	Yes	Yes	N/A	Yes
SIM Socket	2	2	2	2	2	3	3	4	6 (BOM option)	2
USB	1 x USB 3.0 2 x USB 2.0	1 x USB 3.0, 2 x USB 2.0	1 x USB 3.0, 2 x USB 2.0	1 x USB 3.0, 1 x USB 2.0	1 x USB 2.0	1 x USB 3.0, 2 x USB 2.0	1 x USB 3.0, 2 x USB 2.0	2 x USB 3.0, 1 x USB 2.0	3 x USB 2.0, 1 x USB 3.0	2 x USB 3.0, 1 x USB 2.0
COM	2 x RS232, 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	2 x RS232 1 x RS485	2 x RS232 1 x RS485	2 x RS232 1 x RS422/485	2 x RS232 1 x RS422/485	2 x RS232 full, 1 x RS232 TX/RX, 1 x RS485	1 x RS232 full, 1 x RS232 TX/RX, 1 x RS485	2 x RS232, 1 x RS485
CAN/OBDII	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board. BOM option OBD SAE J1939	CAN Bus 2.0B on board. BOM option OBD SAE J1939/J1708 module	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board (w/ isolation)	Isolated CAN Bus 2.0B on board
Video Out	VGA, DP	VGA, HDMI	VGA, HDMI	VGA	VGA. Optional HDMI	VGA, DP	VGA, DP, 4 x (Video-in + Audio-in)	HDMI, VGA, LVDS (option), ultraONE+ (option)	2 x VGA, HDMI	VGA, HDMI
Ethernet	1 x Intel® 10/100/1000	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000	1 x Intel® 10/100/1000	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000	3 x Intel® 10/100/1000 (2 x LAN exclusion with PoE)	2 x Intel® 10/100/1000 (M12), 3 x Intel® 10/100/1000 (M12) (BOM option)	1 x Intel® 10/100/1000
PoE	N/A	N/A	2 x (802.3af/at). Total 60W	N/A	N/A	N/A	N/A	2 x (802.3af/at). Total 30W (by request)	N/A	4 x (802.3af/at). Total 60W
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	1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out	2 x Mic-in, 2 x Line-out	2 x Mic-in, 2 x Line-out	1 x Mic-in, 2 x Line-out	1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out
mini-Pcie Socket	2 x (PCIe+USB 2.0), 1 x (PCIe or mSATA), 1 x USB 2.0	1 x (PCIe+USB 2.0+mSATA), 1 x (PCIe+USB 2.0), 1 x USB 2.0	1 x (PCIe+USB 2.0+mSATA), 1 x (PCIe+USB 2.0), 1 x USB 2.0	1 x (PCIe+USB 2.0), 1 x USB 2.0	1 x (PCIe+USB 2.0+mSATA), 1 x USB 2.0	3 x (PCIe+USB 2.0), 1 x USB 2.0	3 x (PCIe+USB 2.0), 1 x USB 2.0	2 x (PCIe+USB 2.0), 1 x USB 2.0	2 x (PCIe+USB 2.0), 1 x USB 2.0, (1 x USB 2.0, (USB 3.0, Co-lay.M.2))	1 x (PCIe+USB 2.0), 1 x USB 2.0
M.2 Socket	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1 x M.2, B Key (USB 2.0, 3.0), up to 2	1 x M.2, B Key (USB 2.0, 3.0), up to 2	Optional 1 x M.2, B Key (USB 2.0, 3.0)
SMBus	N/A	1	1	N/A	N/A	1	1	1	N/A	N/A
DC Output	12V (1A)	12V (2A)	12V (2A)	N/A	N/A	12V (2A)	12V (2A)	12V (2A)	12V (2A)	N/A
GPIO	6 x Programmable GPIO	3 x In, 3 x Out	3 x In, 3 x Out	3 x In, 3 x Out	3 x In, 3 x Out	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 In, 4 x Out	4 x In, 4 x Out	4 x In
Ingress Protection	N/A	N/A	N/A	N/A	IP65	N/A	N/A	N/A	N/A	N/A
Back Up Battery	N/A	Internal (option)	N/A	N/A	N/A	N/A	N/A	Internal (option)	N/A	N/A
Certification	CE, FCC Class B, E13	CE, FCC Class A, E13	CE, FCC Class A, E13	CE, FCC Class A, E13	CE, FCC Class A, E13	CE, FCC Class B, E13	CE, FCC Class B, E13	CE, FCC Class A, E13	CE, FCC Class A, E13	CE, FCC Class A, E13
OS	Win 10, Win 8, Win 7, WES 7, Linux (kernel 3.x)	Win 10 64-bit, Linux, YOCTO (by request)	Win 10 64-bit, Linux, YOCTO (by request)	Win 10, Win 8, Win 7, WES 7, Linux (kernel 3.x)	Win 10, Win 8, Win 7, WES 7, Linux (kernel 3.x)	Win 10, Win 8, Win 7, WES 7, Linux (kernel 3.x)	Win 10, Win 8, Win 7, WES 7, Linux (kernel 3.x)	Win 10 64-bit, Linux, YOCTO (by request)	Win 10 64-bit, Linux, YOCTO (by request)	Win 10, Linux, YOCTO (by request)
Operating Temperature	-30°C to 70°C	-40°C to 70°C (w/o internal backup battery)	-40°C to 70°C	-40°C to 70°C	-40°C to 70°C	-30°C to 70°C	-30°C to 70°C	-40°C to 70°C (w/o internal backup battery)	-40°C to 70°C	-30°C to 60°C

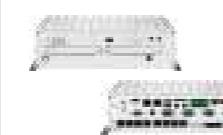
Vehicle Telematics Computer

Model				
VTC 7200				
CPU	Intel® Core™ i3-4010U	Intel® Core™ i5-4300U	Intel® Core™ i7-4650U	Intel® Core™ i3-5010U
Chipset	N/A	N/A	N/A	N/A
Memory	2 x DDR3L 1333/1600 SO-DIMM, 2GB (default) up to 16GB	2 x DDR3L 1333/1600 SO-DIMM, 2GB (default) up to 16GB	2 x DDR3L 1333/1600 SO-DIMM, 2GB (default) up to 16GB	2 x DDR3L 1333/1600 SO-DIMM, 2GB (default) up to 16GB
Storage	2 x 2.5" SATA 3.0 SSD/HDD (removable, 9.5mm)	2 x 2.5" SATA 3.0 SSD/HDD (removable, 9.5mm)	2 x 2.5" SATA 3.0 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)	1 x CFast (external accessible)	1 x CFast (external accessible)
Dimensions (mm)	260 x 206 x 79.5	260 x 206 x 79.5	260 x 206 x 79.5	260 x 206 x 79.5
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Ignition Control	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Power Management	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
GPS	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)
Optional Communication	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN
Voice	Yes	Yes	Yes	Yes
SIM Socket	3	3	3	3
USB	2 x USB 3.0, 2 x USB 2.0	2 x USB 3.0, 2 x USB 2.0	2 x USB 3.0, 2 x USB 2.0	2 x USB 3.0, 2 x USB 2.0
COM	2 x RS232 1 x RS232/422/485	2 x RS232 1 x RS232/422/485	2 x RS232 1 x RS232/422/485	2 x RS232 1 x RS232/422/485
CAN/OBDII	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module
Video Out	VGA, DP, LVDS (internal)	VGA, DP, LVDS (internal)	VGA, DP, LVDS (internal)	VGA, DP, LVDS (internal)
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
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	2 x Mic-in, 2 x Line-out
mini-Pcie Socket	3 x (PCIe+USB 2.0), 1 x USB 2.0	3 x (PCIe+USB 2.0), 1 x USB 2.0	3 x (PCIe+USB 2.0), 1 x USB 2.0	3 x (PCIe+USB 2.0), 1 x USB 2.0
M.2 Socket	N/A	N/A	N/A	N/A
SMBus	1	1	1	1
DC Output	12V (2A)	12V (2A)	12V (2A)	12V (2A)
GPIO	MCU: 2 x DI, 2 x DO 4 x In, 4 x Out	4 x In, 4 x Out	4 x In, 4 x Out	4 x In, 4 x Out
Ingress Protection	N/A	N/A	N/A	N/A
Back Up Battery	N/A	N/A	N/A	N/A
Certification	CE, FCC Class B, E13	CE, FCC Class B, E13	CE, FCC Class B, E13	CE, FCC Class B, E13
OS	Win 10, Win 8, WES 8, Win 7, WES 7, Win XP, Linux (kernel 3.x)	Win 10, Win 8, WES 8, Win 7, WES 7, Win XP, Linux (kernel 3.x)	Win 10, Win 8, WES 8, Win 7, WES 7, Win XP, Linux (kernel 3.x)	Win 10, Win 8, WES 8, Win 7, WES 7, Linux (kernel 3.x)
Operating Temperature	-30°C to 55°C	-30°C to 55°C	-30°C to 55°C	-30°C to 55°C

Advanced Telematics Computer

Model		
VTC 7240		
CPU	Intel® Core™ i7-5650U	Intel® Core™ i7-8700T
Chipset	N/A	Intel® Q370
Memory	2 x DDR3L 1333/1600 SO-DIMM, 2GB (default) up to 16GB	2 x DDR4 2666 SO-DIMM, 8GB (default) up to 32GB
Storage	2 x 2.5" SATA 3.0 SSD/HDD (removable, 9.5mm)	2 x 2.5" SATA 3.0 SSD (removable, 15mm)
Second Storage	1 x CFast (external accessible)	1 x mSATA 3.0, 1 x mSATA 3.0 (option)
Dimensions (mm)	260 x 206 x 79.5	260 x 196 x 99
Power Input	DC 9V to 36V	DC 9V to 36V
Ignition Control	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Power Management	Low voltage protection & configuration via software	Low voltage protection & configuration via software
GPS	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)
Optional Communication	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN
Voice	Yes	Yes
SIM Socket	3	3 (eSIM option)
USB	2 x USB 3.0, 2 x USB 2.0	6 x USB 3.1 (Gen2)
COM	2 x RS232 1 x RS232/422/485	2 x RS232, 1 x RS232/422/485
CAN/OBDII	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	Isolated CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module
Video Out	VGA, DP, LVDS (internal)	VGA, HDMI, ultraONE+
Ethernet	2 x Intel® 10/100/1000	1 x Intel® 10/100/1000
PoE	N/A	8 x independent Intel® 10/100/1000 (w/ 802.3at/af). Total 60W
Audio	2 x Mic-in, 2 x Line-out	1 x Mic-in, 1 x Line-out
mini-Pcie Socket	3 x (PCIe+USB 2.0), 1 x USB 2.0	3 x (PCIe+USB 2.0), 1 x USB 2.0 1 x (USB 2.0, PCIe 3.0, SATA 3.0), 1 x (USB 2.0) or optional M.2 Key, 1 x (USB 2.0, PCIe 3.0, SATA 3.0 (option))
M.2 Socket	N/A	1 x M.2 key B (USB 2.0, USB 3.1)
SMBus	1	N/A
DC Output	12V (2A)	12V (2A)
GPIO	4 x In, 4 x Out	4 x In, 4 x Out
Ingress Protection	N/A	N/A
Back Up Battery	N/A	N/A
Certification	CE, FCC Class B, E13	CE, FCC Class A, E13
OS	Win 10, Win 8, WES 8, Win 7, WES 7, Win XP, Linux (kernel 3.x)	Win 10, Linux, YOCTO (by request)
Operating Temperature	-30°C to 55°C	-20°C to 60°C

Modular Vehicle Computer System

Model								
	MVS 2620-IPK	MVS 2623-C6MK	MVS 2623-C8SK	MVS 5200 (w/ VMS SW)	MVS 5210 (w/ VMS SW)	MVS 5600-3BK	MVS 5600-7BK	MVS 5600-3IPK
CPU	Intel Atom® x7-E3950, 4C 2.0GHz	Intel Atom® x7-E3950, 4C 2.0GHz	Intel Atom® x7-E3950, 4C 2.0GHz	Intel® Core™ i3-5010U	Intel® Core™ i7-5650U	Intel® Core™ i3-6100U	Intel® Core™ i7-6600U	Intel® Core™ i3-6100U
Chipset	N/A	N/A	N/A	N/A	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 1600 SO-DIMM, 2GB (default) up to 8GB	2 x DDR3L 1600 SO-DIMM, 2GB (default) up to 16GB	2 x DDR3L 1600 SO-DIMM, 2GB (default) up to 16GB	2 x DDR3L 1600 SO-DIMM, 2GB (default) up to 16GB	2 x DDR3L 1600 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	2 x 2.5" SATA 3.0 SSD/HDD (removable)	2 x 2.5" SATA 3.0 SSD/HDD (removable)	2 x 2.5" SATA 3.0 SSD/HDD (removable, 15mm), 1 x mSATA	2 x 2.5" SATA 3.0 SSD/HDD (removable, 15mm), 1 x mSATA	1 x 2.5" SATA 3.0 SSD/HDD (removable)	2 x 2.5" SATA 3.0 SSD/HDD (removable)	1 x 2.5" SATA 3.0 SSD/HDD
Second Storage	1 x CFast (external accessible)	N/A	N/A	1 x CFast (external accessible)				
Dimensions (mm)	260 x 198 x 50	260 x 196 x 79.6	260 x 196 x 79.6	260 x 206 x 137	260 x 206 x 137	260 x 196 x 66.5	260 x 196 x 66.5	260 x 198 x 66.5
Power Input	DC 9V to 36V	DC 9V to 36V (w/ optional internal back up battery)	DC 9V to 36V (w/ optional internal back up battery)	DC 9V to 36V (w/ optional internal back up battery)	DC 9V to 36V (w/ optional internal back up battery)	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Ignition Control	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Power Management	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
GPS	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)
Optional Communication	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN
Voice	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIM Socket	3	5	3	3	3	3	3	3
USB	3 x USB 2.0	2 x USB 3.0, 1 x USB 2.0	2 x USB 3.0, 1 x USB 2.0	2 x USB 3.0, 2 x USB 2.0	2 x USB 3.0, 2 x USB 2.0	4 x USB 3.0	4 x USB 3.0	1 x USB 3.0, 2 x USB 2.0
COM	3 x RS232, 2 x RS485	2 x RS232, 1 x RS232/422/485	2 x RS232, 1 x RS232/422/485	2 x RS232/422/485	2 x RS232/422/485	2 x RS232, 1 x RS232/422/485	2 x RS232, 1 x RS232/422/485	3 x RS232, 2 x RS485
CAN/OBD	Isolated CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	Isolated CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module
Video Out	VGA	VGA, HDMI	VGA, HDMI	1 x PC VGA, 1 x NVR VGA, 1 x LVDS	1 x PC VGA, 1 x NVR VGA, 1 x LVDS	VGA, HDMI	VGA, HDMI	VGA
Ethernet	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000
PoE	N/A	6 x M12 (802.3af/at). Total 60W	8 x (802.3af). Total 60W	8 x (802.3af). Total 60W	8 x (802.3af). Total 60W	N/A	N/A	N/A
Audio	1 x Mic-in, 2 x Line-out	2x Mic-in, 2 x Line-out	2 x Mic-in, 2 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	2 x Mic-in, 2 x Line-out	1 x Mic-in, 2 x Line-out
mini-Pcie Socket	2 x (PCIe+USB 2.0), 1 x USB 3.0/2.0, 1 x USB 2.0	2 x (PCIe+USB 2.0), 2 x USB 2.0	2 x (PCIe+USB 2.0), 1 x USB2 .0	1 x (PCIe+USB 2.0), 1 x USB 2.0, 1 x mSATA	1 x (PCIe+USB 2.0), 1 x USB 2.0, 1 x mSATA	2 x (PCIe+USB 2.0), 1 x USB 2.0	2 x (PCIe+USB 2.0), 1 x USB 2.0	2 x (PCIe+USB 2.0), 1 x USB 3.0/2.0, 1 x USB 2.0
M.2 Socket	N/A	1 x M.2, B Key (USB 2.0, 3.0)	N/A	N/A	N/A	N/A	N/A	N/A
SMBus	N/A	1	1	1	1	1	1	N/A
DC Output	12V (2A)	12V (2A)	12V (2A)	12V (2A)	12V (2A)	12V (2A)	12V (2A)	12V (2A)
GPIO	3 x DO, 3 x DI (w/ isolation)	8 x Programmable DIO MCU: 2 x DI, 2 x DO, 1 x Speed frequency	8 x Programmable DIO MCU: 2 x DI, 2 x DO, 1 x Speed frequency	PC: 4 x DI, 4 x DO MCU: 2 x DI, 2 x DO, 1 x Analog-In, 1 x Speed frequency	PC: 4 x DI, 4 x DO MCU: 2 x DI, 2 x DO, 1 x Analog-In, 1 x Speed frequency	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 DO, 3 x DI (w/ isolation)
Ingress Protection	IP65	N/A	N/A	N/A	N/A	N/A	N/A	IP65
Back Up Battery	N/A	Internal (option)	Internal (option)	Internal (option)	Internal (option)	Internal (option)	Internal (option)	N/A
Certification	CE, FCC Class A, E13	CE, FCC Class A, E13	CE, FCC Class A, E13	CE, FCC Class B, E13	CE, FCC Class B, E13	CE, FCC Class A, E13	CE, FCC Class A, E13	CE, FCC Class A, E13
OS	Win 10 64-bit, Linux, YOCTO (by request)	Win 10 64-bit, Linux, YOCTO (by request)	Win 10 64-bit, Linux, YOCTO (by request)	Win 10, Win 8, WES 8, Win 7, WES 7, Linux (kernel 3.x)	Win 10, Win 8, WES 8, Win 7, WES 7, Linux (kernel 3.x)	Win 10, Win 8, WES 8, Win 7, WES 7, Linux (kernel 3.x)	Win 10, Win 8, WES 8, Win 7, WES 7, Linux (kernel 3.x)	Win 10, Win 8, WES 8, Win 7, WES 7, Linux (kernel 3.x)
Operating Temperature	-40°C to 70°C	-40°C to 70°C (w/o internal back up battery)	-40°C to 70°C (w/o internal back up battery)	-30°C to 50°C (w/o internal back up battery)	-30°C to 50°C (w/o internal back up battery)	-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

Modular Vehicle Computer System

Model			
	MVS 5600-7IPK	MVS 5603-3C6SMK	MVS 5603-7C6SMK
CPU	Intel® Core™ i7-6600U	Intel® Core™ i3-6100U	Intel® Core™ i7-6600U
Chipset	N/A	N/A	N/A
Memory	2 x DDR3L 1600 SO-DIMM, 2GB (default) up to 16GB	2 x DDR3L 1600 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	2 x 2.5" SATA 3.0 SSD/HDD (removable)	2 x 2.5" SATA 3.0 SSD/HDD (removable)
Second Storage	1 x CFast (external accessible)	1 x CFast (external accessible)	1 x CFast (external accessible)
Dimensions (mm)	260 x 198 x 66.5	260 x 196 x 91	260 x 196 x 91
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 36V
Ignition Control	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Power Management	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
GPS	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)
Optional Communication	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN
Voice	Yes	Yes	Yes
SIM Socket	3	5	5
USB	1 x USB 3.0, 2 x USB 2.0	4 x USB 3.0	4 x USB 3.0
COM	3 x RS232, 2 x RS485	2 x RS232, 1 x RS232/422/485	2 x RS232, 1 x RS232/422/485
CAN/OBD	Isolated CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module	CAN Bus 2.0B on board. Optional OBD SAE J1939/J1708 module
Video Out	VGA	VGA, HDMI	VGA, HDMI
Ethernet	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000	2 x Intel® 10/100/1000
PoE	N/A	6 x M12 (802.3af/at). Total 60W	6 x M12 (802.3af/at). Total 60W
Audio	1 x Mic-in, 2 x Line-out	2 x Mic-in, 2 x Line-out	2 x Mic-in, 2 x Line-out
mini-Pcie Socket	2 x (PCIe+USB 2.0), 1 x USB 3.0/2.0, 1 x USB 2.0	2 x (PCIe+USB 2.0), 2 x USB 2.0	2 x (PCIe+USB 2.0), 2 x USB 2.0
M.2 Socket	N/A	1 x M.2, B Key (USB 2.0, 3.0)	1 x M.2, B Key (USB 2.0, 3.0)
SMBus	N/A	1	1
DC Output	12V (2A)	12V (2A)	12V (2A)
GPIO	3 x DO, 3 x DI (w/isolation)	8 x Programmable DIO MCU: 2 x DI, 2 x DO, 1 x Speed frequency	8 x Programmable DIO MCU: 2 x DI, 2 x DO, 1 x Speed frequency
Ingress Protection	IP65	N/A	N/A
Back Up Battery	N/A	Internal (option)	Internal (option)
Certification	CE, FCC Class A, E13	CE, FCC Class A, E13	CE, FCC Class A, E13
OS	Win 10, Win 8, WES 8, Win 7, WES 7, Linux (kernel 3.x)	Win 10, Win 8, WES 8, Win 7, WES 7, Linux (kernel 3.x)	Win 10, Win 8, WES 8, Win 7, WES 7, Linux (kernel 3.x)
Operating Temperature	-30°C to 60°C	-30°C to 60°C	-30°C to 60°C

Vehicle Network Switch

Model				
	MVS 5603-3C8SK	MVS 5603-7C8SK	VES30-4S	VES30-8S
Architecture	Intel® Core™ i3-6100U	Intel® Core™ i7-6600U	Unmanaged GbE switch	Unmanaged GbE switch
PoE	N/A	N/A	4 x 10/100/1000 base-T	8 x 10/100/1000 base-T
Ethernet	2 x DDR3L 1600 SO-DIMM, 2GB (default) up to 16GB	2 x DDR3L 1600 SO-DIMM, 2GB (default) up to 16GB	DC 9V to 36V	DC 9V to 36V
Standard Compliance	1 x CFast (external accessible)	1 x CFast (external accessible)	1 x Intel® 10/100/1000 base-T	1 x Intel® 10/100/1000 base-T
LED	260 x 196 x 91	260 x 196 x 91	IEEE 802.3af PSE, Total 60W	IEEE 802.3af PSE, Total 120W
Dimensions (mm)	260 x 196 x 91	260 x 196 x 91	1 x power indicator 4 x PoE indicator 1 x Low voltage protection indicator	1 x power indicator 8 x PoE indicator 1 x Low voltage protection indicator
Ignition Control	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes	Yes
Power Management	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & power on/off delay time	Low voltage protection & power on/off delay time
Power Input	DC 9V to 36V			
Certification	CE, FCC Class B, E13			
Operating Temperature	-30°C to 70°C	-30°C to 70°C	-30°C to 70°C	-30°C to 70°C

Railway Computer

Model	Coming soon				
	nROK 1020-A	nROK 1220-AC4S	nROK 5300	nROK 5500	MVS 5210-R
CPU	Intel Atom® x5-E3930	Intel Atom® x7-E3950	Intel® Core™ i5 3610ME	Intel® Core™ i7 3517UE	Intel® Core™ i7-5650U
Chipset	N/A	N/A	Intel® QM77	Intel® QM77	N/A
Memory	4GB DDR3L SO-DIMM (default) up to 8GB	4GB DDR3L SO-DIMM (default) up to 8GB	2GB DDR3 1333 SO-DIMM (default) up to 16GB	2GB DDR3 1333 SO-DIMM (default) up to 16GB	2GB DDR3 1333 SO-DIMM (default) up to 16GB
Storage	1 x 2.5" SATA 3.0 SSD (9.5mm)	1 x 2.5" SATA 3.0 SSD (removable, 15mm)	4 x 2.5" SATA 2.0 SSD (removable) (3 x removable, 9.5mm + 1 x fixed HDD tray, 15mm for option)	4 x 2.5" SATA 2.0 SSD (removable) (3 x removable, 9.5mm + 1 x fixed HDD tray, 15mm for option)	2 x 2.5" SATA 2.0 SSD (removable, 15mm)
Second Storage	1 x mSATA	1 x CFast, 1 x SD (external accessible)	N/A	N/A	1 x CFast (external accessible) 1 x mSATA
Dimensions (mm)	185 x 120 x 45	165 x 137.6 x 82.5	482 x 400 x 88	482 x 400 x 88	260 x 206 x 137
Ingress Protection	N/A	N/A	N/A	N/A	N/A
Power Input	DC 24V (w/o isolation)	DC 24V (w/o isolation)	DC 24/36/48/72/110V (w/ isolation)	DC 24/36/48/72/110V (w/ isolation)	DC 24V (w/o isolation)/ 110V (w/ isolation) (w/ optional internal back up battery)
Ignition Control	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Power Management	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
GPS	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)
Optional Communication	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN
SIM Socket	1	2	N/A	N/A	2
USB	2 x USB 3.0	2 x USB 3.0, 1 x USB 2.0	1 x M12 with 2 x USB 2.0 signal, 2 x USB 3.0	1 x M12 with 2 x USB 2.0 signal, 2 x USB 3.0	2 x USB 3.0, 2 x USB 2.0
COM	5 x RS232 (Tx/Rx), 2 x RS485	2 x Isolated RS232, 1 x Isolated RS485	2 x RS232, 1 x RS422/485	2 x RS232, 1 x RS422/485	2 x RS232/422/485
CAN	CAN Bus 2.0B on board	Isolated CAN Bus 2.0B on board	N/A	N/A	CAN Bus 2.0B on board
Video Out	VGA, HDMI	VGA, HDMI	VGA, HDMI	VGA, LVDS	VGA, DP
PCI-104	N/A	N/A	1	1	N/A
Ethernet	1 x Intel® 10/100/1000 (M12)	1 x Intel® 10/100/1000 (M12)	2 x Intel® 10/100/1000 (M12)	2 x Intel® 10/100/1000 (M12)	2 x Intel® 10/100/1000 (M12)
PoE	N/A	4 x M12 (802.3af/at). Total 60W	8 x M12 (802.3af). Total 60W	8 x M12 (802.3af). Total 60W	8 x (802.3af). Total 60W
Audio	1 x Mic-in, 1 x Line-out (M12)	1 x Mic-in, 1 x Line-out	1 x Mic-in, 1 x Line-out, 1 x Line-in	1 x Mic-in, 1 x Line-out, 1 x Line-in	1 x Mic-in, 2 x Line-out
mini-PCIe Socket	1 x (PCIe+USB 2.0+mSATA), 1 x USB 2.0	1 x (PCIe+USB 2.0), 1 x USB 2.0	2 x (PCIe+USB 2.0), 1 x USB 2.0	2 x (PCIe+USB 2.0), 1 x USB 2.0	1 x (PCIe+USB 2.0), 1 x USB 2.0, 1 x mSATA
M.2 Socket	N/A	Optional 1 x M.2, B Key (USB 2.0, 3.0)	N/A	N/A	N/A
SMBus	1	N/A	N/A	N/A	N/A
DC Output	12V (2A)	N/A	N/A	N/A	12V (2A)
GPIO	5 x Programmable GPIO	4 x DI (w/ isolation)	4 x DI, 4 x DO	4 x DI, 4 x DO	PC: 4 x DI, 4 x DO MCU: 3 x DI, 2 x DO, 2 x Analog-In, 1 x Speed frequency
Certification	CE, FCC Class A, EN50155	CE, FCC Class A, EN50155	CE, FCC Class A, EN50155, EN45545-2	CE, FCC Class A, EN50155, EN45545-2	CE, FCC Class B, EN50155
OS	Win 10 64-bit, Linux, YOCTO (by request)	Win 10 64-bit, Linux, YOCTO (by request)	Windows Embedded Standard 7	Windows Embedded Standard 7	Win 8, WES 8, Win 7, WES 7, Linux (kernel 3.x)
Operating Temperature	-40°C to 70°C (TX)	-40°C to 70°C (TX)	-40°C to 70°C (TX)	-40°C to 70°C (TX)	-40°C to 70°C (TX)

Coming soon	Coming soon	Coming soon	Coming soon	
VTC 6210-R	nROK 6221	nROK 6221-IP	nROK 6222-AC4S	VTC 7220-R
Intel Atom® E3845	Intel Atom® x7-E3950	Intel Atom® x7-E3950	Intel Atom® x7-E3950	Intel® Core™ i7-4650U
N/A	N/A	N/A	N/A	N/A
2GB DDR3 1333 SO-DIMM (default) up to 8GB	4GB DDR3 1333 SO-DIMM (default) up to 8GB	4GB DDR3 1333 SO-DIMM (default) up to 8GB	4GB DDR3 SO-DIMM (default) up to 8GB	2GB DDR3 1333 SO-DIMM (default) up to 16GB
1 x 2.5" SATA 2.0 SSD (removable, 9.5mm)	1 x 2.5" SATA 3.0 SSD (removable, 15mm)	1 x 2.5" SATA 3.0 SSD (removable, 15mm)	2 x 2.5" SATA 3.0 SSD (removable, 15mm)	2 x 2.5" SATA 2.0 SSD (removable, 9.5mm)
1 x CFast (external accessible)	1 x CFast (external accessible)	1 x CFast (external accessible)	1 x SD (external accessible), 1 x Internal USB DOM	1 x CFast (external accessible)
260 x 176 x 70	260 x 196 x 70	260 x 198 x 70	260 x 196 x 50	260 x 206 x 137.5
N/A	N/A	IP65	N/A	N/A
DC 24/36V (w/o isolation) 110V (w/ isolation)	DC 24V (w/o isolation), DC 24/110V (w/ isolation)	DC 24V (w/o isolation), DC 24/110V (w/ isolation)	DC 24V (w/o isolation)	DC 24/36/110V (w/ isolation)
Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)	u-blox NEO-M8N on board	VIOB-GPS-02 module (u-blox NEO-M8N)
Wi-Fi/Bluetooth/WWAN	Wi-Fi/WWAN/Bluetooth	Wi-Fi/WWAN/Bluetooth	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN
3	6, 8 (BOM option)	6, 8 (BOM option)	2	3
2 x USB 2.0 (M12), 1 x USB 3.0	3 x USB 2.0, 1 x USB 3.0	2 x USB 2.0, 1 x USB 3.0	1 x USB 3.0, 3 x USB 2.0	2 x USB 3.0 type A, 2 x USB 2.0 type A
2 x RS232 (w/ isolation), 1 x RS422/485 (w/ isolation)	1 x RS232 full, 1 x RS232 TX/RX, 1 x RS485 (M12, w/ isolation)	1 x RS232 full, 1 x RS232 TX/RX, 1 x RS485 (M12, w/ isolation)	1 x RS232 Full (w/ isolation), 1 x RS232 TX/RX (w/ isolation), 1 x RS422/485 (w/ isolation)	2 x RS232, 1 x RS232/422/485
CAN Bus 2.0B on board	CAN Bus 2.0B on board (w/ isolation)	CAN Bus 2.0B on board (w/ isolation)	Isolated CAN Bus 2.0B on board	CAN Bus 2.0B on board
VGA, DP	2 x VGA, HDMI	2 x VGA	VGA, HDMI	VGA, DP
N/A	N/A	N/A	N/A	N/A
2 x Intel® 10/100/1000 (M12)	2 x Intel® 10/100/1000 (M12), 3 x Intel® 10/100/1000 (M12) (BOM option)	2 x Intel® 10/100/1000 (M12), 3 x Intel® 10/100/1000 (M12) (BOM option)	1 x Intel® 10/100/1000 (M12)	2 x Intel® 10/100/1000 (M12)
N/A	N/A	N/A	4 x M12 (802.3af/at). Total 60W	N/A
2 x Mic-in, 2 x Line-out	1 x Mic-in, 2 x Line-out (DB9)	1 x Mic-in, 1 x Line-out (M6)	1 x Mic-in, 1 x Line-out	2 x Mic-in, 2 x Line-out
2 x (PCIe+USB 2.0), 1 x USB 2.0	2 x (PCIe+USB 2.0), 1 x (USB 2.0), 1 x (USB 2.0, (USB 3.0, Co-lay M.2))	2 x (PCIe+USB 2.0), 1 x (USB 2.0, (USB 3.0, Co-lay M.2))	2 x (PCIe+USB 2.0), 1 x (USB 2.0, (USB 3.0, Co-lay M.2))	3 x (PCIe+USB 2.0), 1 x USB 2.0
N/A	1 x M.2, B key (USB 2.0, 3.0), up to 2	1 x M.2, B key (USB 2.0, 3.0), up to 2	Optional 1 x M.2, B Key (USB 2.0, 3.0)	N/A
N/A	N/A	N/A	N/A	N/A
4 x DI (w/ isolation) 4 x DO (w/ isolation)	4 x DI (w/ isolation) 4 x DO (w/ isolation)	4 x DI (w/ isolation) 3 x DO (w/ isolation) (M12)	5 x In (w/ isolation), 1 x Out (w/ isolation)	8 x Programmable DI/DO
CE, FCC Class A, EN50155	CE, FCC Class A, EN50155	CE, FCC Class A, EN50155	CE, FCC Class A, EN50155	CE, FCC Class A, EN50155
Win 8, WES 8, Win 7, WES 7, Linux (kernel 3.x)	Win 10 64-bit, Linux, YOCTO (by request)	Win 10 64-bit, Linux, YOCTO (by request)	Win 10 64-bit, Linux, YOCTO (by request)	Win 8, WES 8, Win 7, WES 7, Linux (kernel 3.x)
-40°C to 70°C (TX)	-40°C to 70°C (TX)	-40°C to 70°C (TX)	-40°C to 70°C (TX)	-40°C to 70°C (TX)

Vehicle Mount Display

Model							
	VMD 1000	VMD 1001	VMD 2000	VMD 2002	VMD 2003	VMD 3002	VMD 3110
LCD Size	7" TFT LCD	7" TFT LCD	8" TFT LCD	8" TFT LCD	8" TFT LCD	10.4" TFT LCD	10.4" TFT LCD
Resolution	800 x 480	800 x 480	800 x 600	800 x 600	800 x 600	1024 x 768	1024 x 768
Brightness (Typ.)	500cd/m²	500cd/m²	400cd/m²	400cd/m²	1000cd/m²	1200cd/m²	1200cd/m²
Contrast Ratio	600:1	600:1	500:1	500:1	500:1	500:1	500:1
View Angle	V: 60/60 H: 70/70	V: 60/60 H: 70/70	V: 50/70 H: 70/70	V: 50/70 H: 70/70	V: 60/60 H: 70/70	V: 60/60 H: 70/70	V: 60/60 H: 70/70
Brightness Adjustment	Auto via light sensor	Auto via light sensor	Auto via light sensor	Auto via light sensor	Auto via light sensor	Auto via light sensor	Auto via light sensor
Speaker	2 x Built-in speaker	2 x Built-in speaker	2 x Built-in speaker	2 x Built-in speaker	2 x Built-in speaker	2 x Built-in speaker	2 x Built-in speaker
Touch Screen	4-wire resistive, anti-glare	4-wire resistive, anti-glare	4-wire resistive, anti-glare	4-wire resistive, anti-glare	4-wire resistive, anti-glare	Projected capacitive	Projected capacitive
Camera	N/A	N/A	N/A	N/A	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	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	1 x Monitor power button 1 x OSD menu 2 x Brightness control 2 x Volume control 1 x Auto Config
Mounting	VESA 75	VESA 75	VESA 75	VESA 75	VESA 75	VESA 75/100	VESA 75/100
Ingress Protection	Front panel IP54	Front panel IP54	Front panel IP54	Front panel IP54	Front panel IP54	IP65	IP65
Dimensions (mm)	182 x 138 x 36.3	182 x 138 x 36.3	207 x 173 x 36.7	207 x 173 x 36.7	207 x 173 x 36.7	256.5 x 202.1 x 31.5	256.5 x 202.1 x 31.5
Power Input	DC 12V (via LVDS)	DC 9V to 36V	DC 12V (via LVDS)	DC 9V to 36V	DC 24V (via ultraONE+)	DC 9V to 36V	DC 24V (via ultraONE+)
Video Input	Integrated LVDS CONN (LVDS, USB, 12V)	VGA	Integrated LVDS CONN (LVDS, USB, 12V)	Integrated DVI CONN (VGA, USB, 12V)	ultraONE+, 4 x CVBS	VGA, 4 x CVBS	ultraONE+, 4 x CVBS
Audio	1 x Mic-in (lateral side) 1 x Mic-out (lateral side) 1 x Line-in (bottom side) 1 x Mic-out (bottom side)	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)	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-in	1 x Line-in
USB	1 x USB 2.0	2 x USB 2.0	1 x USB 2.0	1 x USB 2.0	1 x USB 2.0	1 x USB 2.0	1 x USB 2.0
Remote Power Button	Remotely power on/off VTC	N/A	Remotely power on/off VTC	N/A	Remotely power off VTC, ATC	N/A	Remotely power off VTC, ATC
Certification	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B	CE, FCC Class B
Operating Temperature	-20°C to 70°C	-20°C to 70°C	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C

Vehicle Mount Computer

Model	VMC 110/111	VMC 1100	VMC 3020	VMC 3021	VMC 4020-4A0/4A1
CPU	Freescale i.MX6 Dual Lite	Intel Atom® E3825	Intel Atom® E3930	Intel Atom® E3950	Intel Atom® E3950
LCD Size	7" TFT LCD	7" TFT LCD	10.4" TFT LCD	10.4" TFT LCD	12.1" TFT LCD
Resolution	1024 x 600	800 x 480	1024 x 768	1024 x 768	1024 x 768
Brightness (Typ.)	500cd/m ²	400cd/m ²	1200cd/m ²	1200cd/m ²	1200cd/m ²
Contrast Ratio	800:1	600:1	500:1	500:1	750:1
View Angle	V: 70/75 H: 75/75	V: 50/70 H: 70/70	V: 60/60 H: 70/70	V: 60/60 H: 70/70	V: 85/85 H: 85/85
Brightness Adjustment	Auto via light sensor	Auto via light sensor	Auto via light sensor	Auto via light sensor	Auto via light sensor
Speaker	2 x Built-in speaker	2 x Built-in speaker	2 x Built-in speaker	2 x Built-in speaker	2 x Built-in speaker
Touch Screen	4-wire resistive, anti-glare	4-wire resistive, anti-glare	5-wire resistive, anti-glare	5-wire resistive, anti-glare	5-wire resistive, anti-glare
Video Input	N/A	N/A	N/A	3 x CVBS	3 x CVBS
PoE	N/A	N/A	N/A	1 x (802.3af/at). Total 30W (option)	1 x (802.3af/at). Total 30W (option)
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	1 x Power button 2 x Brightness control 2 x Volume control 5 x Function key 1 x Shift key	1 x Power button 2 x Brightness control 2 x Volume control 5 x Function key 1 x Shift key	1 x Power button 2 x Brightness control 2 x Volume control 5 x Function key 1 x Shift key
Mounting	VESA 75/100	VESA 75	VESA 75/100	VESA 75/100	VESA 75/100
Ingress Protection	Front panel IP54	Front panel IP54	Front Panel IP65	IP65	4A0: Front IP65/4A1: IP65
Dimensions (mm)	213 x 145 x 40	213 x 145 x 50	290 x 230 x 68	290 x 230 x 68	340 x 262 x 75
Chipset	N/A	N/A	N/A	N/A	N/A
Memory	2GB DDR3L on board	1 x DDR3L 1600 SO-DIMM 2GB (default) up to 4GB	DDR3L 1600 SO-DIMM slot 4GB (default) up to 8GB	DDR3L 1600 SO-DIMM slot 4GB (default) up to 8GB	1 x DDR3L 1600 SO-DIMM slot 4GB (default) up to 8GB
Storage Interface	1 x eMMC, 1 x Micro SD	1 x SATA DOM	1 x CFast, 1 x 2.5" SSD bay, (9.5mm)	1 x CFast, 1 x 2.5" SSD bay, (9.5mm)	1 x CFast, 1 x 2.5" SSD bay, (9.5mm)
Power Input	DC 9V to 36V	DC 9V to 36V	DC 9V to 60V	DC 9V to 60V	DC 9V to 60V
Ignition Control	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting	Yes, w/ 8 level delay time setting
Power Management	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software	Low voltage protection & configuration via software
GPS	On board u-blox NEO-M8N	On board u-blox NEO-M8N	Optional	VIOB-GPS-02 module (u-blox NEO-M8N)	VIOB-GPS-02 module (u-blox NEO-M8N)
Optional Communication	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN	Wi-Fi/Bluetooth/WWAN
USB	3 x USB 2.0	1 x USB 3.0	2 x USB 2.0 (5V/1.0A) 1 x Power USB (5V/1.5A, 12V/1.5A)	1 x USB 2.0	2 x USB 2.0
COM	1 x RS23 1 x RS232/RS485	1 x RS232, 1 x RS232 (Tx/Rx) or 1 x RS485	2 x Powered RS232 (5V/1.5A, 12V/1.5A)	1 x RS232/422/485 1 x RS232(Tx/Rx)/422/485	1 x RS232/422/485 + 4A0: 1 x RS232/422/485, 4A1: 1 x RS232(Tx/Rx)/422/485
CAN/OBDII	2 x CAN Bus 2.0B	1 x CAN Bus 2.0B. Optional OBDII	1 x Isolated CAN Bus 2.0B	2 x Isolated CAN Bus 2.0B	2 x Isolated CAN Bus 2.0B
Ethernet	1 x Intel® 10/100/1000	1 x Intel® 10/100/1000	1 x Intel® 10/100/1000	1 x Intel® 10/100/1000	2 x Intel® 10/100/1000
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	1 x Mic-in, 1 x Line-out
mini-PCIe Socket	1 x (PCIe+ USB), 1 x (USB+ UART)	1 x (PCIe+ USB), 1 x (USB+ UART)	1 x (PCIe+ USB), 1 x (USB)	3 x (PCIe+ USB), 1 x (USB)	3 x (PCIe+ USB), 1 x (USB)
M.2 Socket	N/A	N/A	1 x M.2 Key E	N/A	N/A
GPIO	3 x GPO, 3 x GPI	2 x PWM, 2 x Analog input, 2 x In, 2 x Out	2 x In, 2 x Out	2 x In, 2 x Out	4A0: 1 x In, 2 x Out 4A1: 2 x In, 2 x Out
Back Up Battery	N/A	N/A	Internal (option)	Internal (option)	Internal (option)
Certification	CE, FCC Class B, E13	CE, FCC Class B, E13, SAE J1113, SAE J1455, ISO7637-2, EN 60950-1 LVD	CE, FCC Class B, E13	CE, FCC Class B, E13	CE, FCC Class B, E13
OS	Android 5.1 & YOCTO	Win 8, WES8, Win 7, WES 7, Linux (kernel 3.x)	Win 10 64-bit, Linux YOCTO (by request)	Win 10 64-bit, Linux YOCTO (by request)	Win 10 64-bit, Linux YOCTO (by request)
Operating Temperature	-20°C to 70°C	-20°C to 60°C	-30°C to 60°C	-30°C to 60°C	-30°C to 60°C

Add-On Modules

Model			
	VIOX-CAN01	VIOB-CAN-03	VIOB-CAN-04
Description	SAE J1708 or OBD SAE J1939 module	CAN Bus 2.0B or OBD SAE J1939 module	Dual CAN Bus 2.0B module
Input I/F	UART	UART	USB 2.0
Input Connector	2 x 5 Pin wafer	2 x 5 Pin wafer	mini-PCIe Socket
Output I/F	SAE J1708 or OBD SAE J1939	CAN Bus 2.0B or OBD SAE J1939	CAN Bus 2.0B
Output Connector	2 x 5 Pin wafer	2 x 5 Pin wafer	6 Pin wafer to DB9
Form Factor	Proprietary	Proprietary	Full-Size mini-PCIe
Dimensions (mm)	50 x 28	50 x 28	51 x 30
Operating Temperature	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
Remark	* CAN Bus 2.0B & SAE J1939 Selection by Switch		

Model			
	VIOB-CAN-05	VIOB-CAN-06	VIOB-TPMS-01
Description	SAE J1708 module	OBD SAE J1939 module	Tire Pressure Monitoring System (TPMS) module
Input I/F	USB 2.0	USB 2.0	USB 2.0
Input Connector	mini-PCIe socket or USB wafer	mini-PCIe socket or USB wafer	mini-PCIe socket or USB wafer
Output I/F	SAE J1708/J1587/J1922	OBD SAE J1939	None
Output Connector	3 Pin wafer to DB9	3 Pin wafer to DB9	None
Form Factor	Full-Size mini-PCIe	Full-Size mini-PCIe	Full-size mini-PCIe
Dimensions (mm)	51 x 30	51 x 30	51 x 30
Operating Temperature	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
Remark	* Tire pressure, temperature and voltage information available. * RF 433MHz		

Add-On Modules

Model				
VIOB-GPS-02		VIOB-GPS-DR02	VIOB-GPS-DR03	VIOB-LTE-AD
Description	u-blox M8N module	u-blox M8L module	u-blox M8U module	M.2 to mini PCIe converter module
Input I/F	UART	UART	UART	USB 2.0
Input Connector	6 Pin wafer	6 Pin wafer	6 Pin wafer	mini PCIe socket
Output I/F	UART	UART	UART	M.2
Output Connector	6 Pin wafer	6 Pin wafer	6 Pin wafer	M.2
Form Factor	Proprietary	Proprietary	Proprietary	Full-Size mini PCIe
Dimensions (mm)	25.4 x 25.4	25.4 x 25.4	25.4 x 25.4	51 x 30
Operating Temperature	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
Remark	* GNSS Support with GPS, GLONASS, Galileo, BeiDou and QZSS * Automotive Dead Reckoning (ADR) * With Battery	* GNSS Support with GPS, GLONASS, Galileo, BeiDou and QZSS * Untethered Dead Reckoning (UDR) * With Battery		* Only for Sierra EM7430/EM7455

Model				
VIOB-AE1M-01	VIOB-PA22-01	VTK-62B	VTK-RELAY-01	
Description	1-Port 100Mbps Automotive Ethernet module	2 x Mic-in & 2 x Line-out module	Smart backup battery kit	Super slim and ruggedized vehicle relay module
Input I/F	USB 2.0	USB 2.0	9~36VDC	USB 2.0 or RS-232
Input Connector	mini PCIe or USB wafer	mini PCIe or USB wafer	3 Pin terminal block	USB type A or DB9
Output I/F	1-Pair UTP	Audio	Power: 12VDC (from backup battery) 24VDC (from vehicle battery) Communication: RS232/SMBus	4 x Relay 4 x DI 4 x DO 1 x ADC input 1 x PWM input
Output Connector	4 Pin wafer to DB9	2 x 6 Pin wafer to DB9	Power: 3-pin terminal block Communication: 2 x 5 Pin	Terminal block
Form Factor	Full-Size mini PCIe	Full-Size mini PCIe	Proprietary	Proprietary
Dimensions (mm)	51 x 30	51 x 30	1) 280 (W) x 150 (D) x 42.2 (H) 2) 297.3 (W) x 175 (D) x 39 (H)	124 (W) x 123 (D) x 24 (H)
Operating Temperature	-40°C to 85°C	-40°C to 85°C	Charging: 0°C to 45°C Discharging: 0°C to 55°C	-40°C to 85°C
Remark	* BroadR-Reach Technology	-	Capacity: 8600mAh (Li-Ion)	It is remotely controlled through RS-232 or USB communication

About NEXCOM

Reliable Partner for the Intelligent Solutions — Committed to Customer Success

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

With its focus on delivering these core values to better serve customers, NEXCOM integrates its capabilities and operates eight global businesses, which are Industrial Mesh, Intelligent Digital Security, Intelligent Platform & Services, Mobile Computing Solutions, Medical & Healthcare Informatics, Network and

Communication Solutions, Smart Manufacturing and Open Robots and Machines. 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 five subsidiaries, from China, Japan, Taiwan, the United States, to the United Kingdom, NEXCOM is able to better facilitate customers' requirements as well as closely work with global partners in different regions.

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



EMBUX	Industrial Mesh: Industry 4.0 outdoor wireless solution, IoT sensor networking, ARM/MCU embedded board design & manufacturing service
GreenBase	Intelligent Digital Security: IP video surveillance camera, mobile camera, ANPR/LPR network camera, panoramic camera, NVR server platform
IPS	Intelligent Platform & Services: smart city, smart retail, digital signage, interactive kiosk, hospitality, gateway, AI edge & ODM customization services
MCS	Mobile Computing Solutions: vehicle telematics computer, in-vehicle panel computer, in-vehicle AI computer, railway computer, vehicle mount display, modular vehicle computer system, in-vehicle networking switch, mobile NVR
MHI	Medical and Healthcare Informatics: total solutions with a variety of medical IT systems
NCS	Network and Communication Solutions: network security, HPC, telecommunication, storage, SDN/NFV, industrial security
NexAIoT	Smart Manufacturing: iAT2000 cloud SCADA & enterprise war room, predictive diagnostic maintenance, IoT edge solution, industry 4.0 project execution
NexCobot	Open Robots and Machines: industrial robot controller, EtherCAT motion control, smart M2M solution, educational robot, smart retail solution

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'll help you deliver reliable vertical solutions, optimized for the next wave of IoT and Industry 4.0 solutions.

Headquarters

NEXCOM International Co., Ltd.

9F, No.920, Chung-Cheng Rd., ZhongHe District, New Taipei City, 23586, Taiwan, R.O.C.
Tel: +886-2-8226-7786
Fax: +886-2-8226-7782
www.nexcom.com

Asia

Taiwan

NexAIoT Co., Ltd.

Taipei Office

13F, No.920, Chung-Cheng Rd.,
ZhongHe District,
New Taipei City, 23586, Taiwan, R.O.C.
Tel: +886-2-8226-7796
Fax: +886-2-8226-7792
Email: sales@nexcom.com.tw
www.nexcom.com.tw

NexAIoT Co., Ltd.

Taichung Office

16F, No.250, Sec. 2, Chongde Rd.,
Beitun Dist.,
Taichung City 406, R.O.C.
Tel: +886-4-2249-1179
Fax: +886-4-2249-1172
Email: sales@nexcom.com.tw
www.nexcom.com.tw

NexCOBOT Taiwan Co., Ltd.

13F, No.916, Chung-Cheng Rd.,
ZhongHe District,
New Taipei City, 23586, Taiwan, R.O.C.
Tel: +886-2-8226-7796
Fax: +886-2-8226-7792
Email: sales@nexcom.com.tw
www.nexcom.com.tw

GreenBase Technology Corp.

13F, No.922, Chung-Cheng Rd.,
Zhonghe Dist.,
New Taipei City, 23586, Taiwan, R.O.C.
Tel: +886-2-8226-7786
Fax: +886-2-8226-7900
Email: sales@nexcom.com.tw
www.nexcom.com.tw

China

NEXSEC Incorporated

Floor 5, No.4, No.7 Fengxian middle Rd.,
(Beike Industrial Park), Haidian District,
Beijing, 100094, China
Tel: +86-10-5704-2680
Fax: +86-10-5704-2681
Email: sales@nexsec.cn
www.nexsec.cn

NEXCOM Shanghai

Room 603/604, Huiyinmingzun Plaza Bldg. 1,
No.609 Yunlin East Rd.,
Shanghai, 200062, China
Tel: +86-21-5278-5868
Fax: +86-21-3251-6358
Email: sales@nexcom.cn
www.nexcom.cn

NEXCOM Surveillance Technology Corp.

Floor 5, Building C, ZhenHan Industrial Zone,
GanKeng Community, Buji Street,
LongGang District,
ShenZhen, 518112, China
Tel: +86-755-8364-7768
Fax: +86-755-8364-7738
Email: steveyang@nexcom.com.tw
www.nexcom.cn

NEXCOM United System Service

Room 603/604, Huiyinmingzun Plaza Bldg. 1,
No. 609, Yunlin East Rd.,
Shanghai, 200062, China
Tel: +86-21-5278-5868
Fax: +86-21-3251-6358
Email: renwang@nexcom.com.tw
www.nexcom.cn

NEXGOL

1st Floor, Building B4, Electronic 2nd Area,
(Phoenix Lake Industrial Park), Yongchuan Dist.,
Chongqing City, 402160, China
Tel: +86-23-4960-9080
Fax: +86-23-4966-5855
Email: sales@nexcobot.com
www.nexgol.com/NexGoL

Beijing NexGemo Technology Co.,Ltd.

5th Floor, Gemotech Building, No.1, Development Rd.,
Changping International Information Industry Base,
Changping District,
Beijing, 102206, China
Tel: +86-10-8190-9399
Fax: +86-10-8190-9456

Japan

NEXCOM Japan

9F, Tamachi Hara Bldg.,
4-11-5, Shiba Minato-ku,
Tokyo, 108-0014, Japan
Tel: +81-3-5419-7830
Fax: +81-3-5419-7832
Email: sales@nexcom-jp.com
www.nexcom-jp.com

Europe

United Kingdom

NEXCOM EUROPE

10 Vincent Avenue,
Crownhill Business Centre,
Milton Keynes, Buckinghamshire
MK8 0AB, United Kingdom
Tel: +44-1908-267121
Fax: +44-1908-262042
Email: sales.uk@nexcom.eu
www.nexcom.eu

America

USA

NEXCOM USA

2883 Bayview Drive,
Fremont CA 94538, USA
Tel: +1-510-656-2248
Fax: +1-510-656-2158
Email: sales@nexcom.com
www.nexcom.com

Please verify specifications before quoting. This guide is intended for reference purpose only.

All product specifications and information are subject to change without notice.

No part of this publication may be reproduced in any form or by any means without prior written permission of the publisher.

All brand and product names are registered trademarks of their respective companies.

©NEXCOM International Co., Ltd. 2019

