AI Vehicle Computer

COMPACT AI Vehicle Series

Computer Vision Edge Unit with NVIDIA Jetson AGX Xavier

LTE / GNSS / Wi-Fi

Dual nanoSIM
CFast
microSD

DC supply

2x CAN

4x PoE LAN
RJ45

2x LAN
M12 x-coded

2x USB 3.1

DP
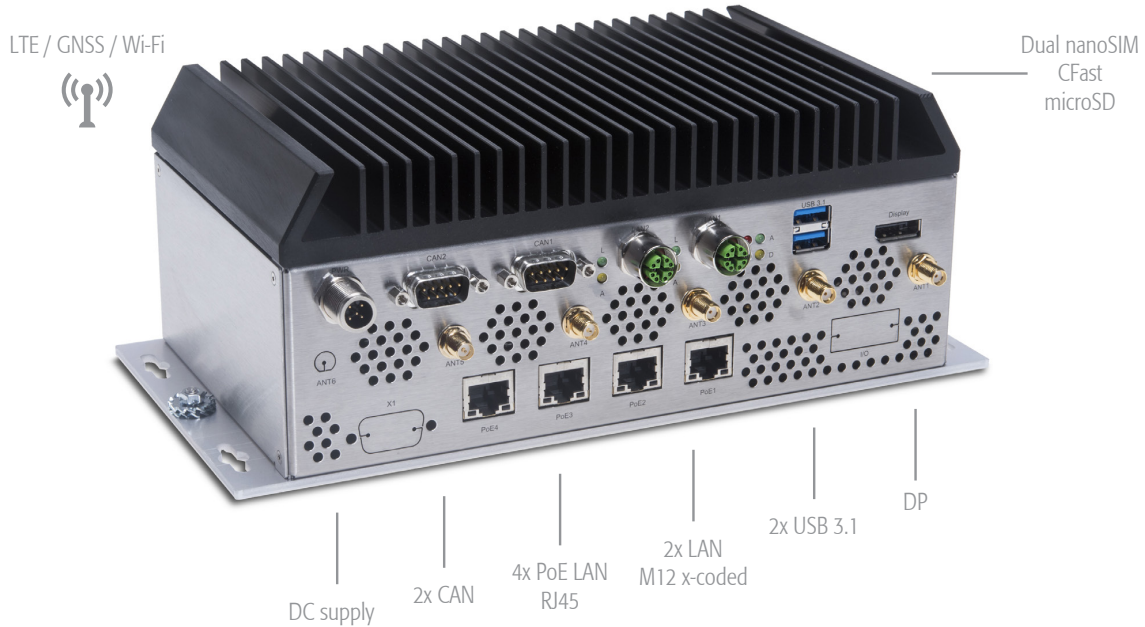
IPC/COMPACT A3 - RML

This fanless RML COMPACT-A3 generation is based on the Jetson AGX Xavier processor module and offers a wide range of interface options.

The robust and uncompromising industrial design allows the implementation in the most demanding mobile AI applications and guarantees long term availability.

- **Power over Ethernet (PoE+), 48VDC out**
- **24/7 continuous operation**
- **Extended AI Computing**
- **Passively cooled, no moving parts**
- **Long term availability with fixed BOM**

![NVIDIA]
Linux for Tegra (L4T)

CE

Product Highlights

UNECE-R10 (E-mark) certified
Power ignition controller
Each LAN interface has its own dedicated NIC
Shock and vibration resistant
LTE and Wi-Fi connectivity options
No moving parts / passively cooled

Product Features

512-Core NVIDIA Volta™ GPU
with 64 Tensor Cores
8-Core ARM v8.2 64-bit NVIDIA Carmel CPU
32GB 256-Bit LPDDR4x RAM soldered on board
Storage options: NVMe M.2 2280 & CFast
Ethernet, USB, CAN (J1939)
LTE, GNSS and WiFi
Aluminum & stainless steel housing

Industries

Automotive
Autonomous Mobile Robots (AMRs)
Transportation
Robotics
Off-highway vehicles

Your partner for reliable embedded computer solutions.

	Order Code	IPC/RMLA3K22-B206S[1]	IPC/RMLA3K22-C203S[1]
Processor module / Performance			
NVIDIA Jetson AGX Xavier (32GB) | 512-Core NVIDIA Volta™ GPU with 64 Tensor Cores 8-Core ARM v8.2 64-bit NVIDIA Carmel CPU		•	•
AI Performance		32 TOPs	32 TOPs
Memory / Storage			
Data L3 Cache Size		4MB	4MB
256-Bit LPDDR4x RAM soldered on board		32GB	32GB
eMMC 5.1 Flash Storage on board		32GB	32GB
microSD Card socket		1	1
M.2 2280 Key M socket (for NVMe SSD) [2]		1	1
CFast socket with retention frame [2]		1	1
Features			
Inertial measurement unit (IMU) STMicroelectronics ISM330DHCXTR		on request	on request
Real time clock (RTC) with battery backup Renata CR2477 (950 mAh)		•	•
Communication Interfaces			
Graphic interface		DisplayPort 1.2	DisplayPort 1.2
USB version 3.1 (10 Gbit/s)	(Type A)	2	2
Internal USB version 2.0 OTG behind the cover	(micro USB Type AB)	1	1
Ethernet 10/100/1000 BASE-T	(M12 female x-coded)	2	2
CAN 2.0A / CAN 2.0B (active/passive), CAN FD supported, isolated	(DSUB9)	2	2
Power over Ethernet - IEEE802.3at 10/100/1000Mbit PSE - Power sourcing equipment, producing 48VDC out	(RJ45)	4 (total max power: 39W)	4 (total max power: 39W)
Serial RS232 / RS422/RS485	(DSUB9)	on request	none
Digital I/O's, 24VDC	(up to 4 inputs & 4 outputs)	on request	none
Analog input, 16bit resolution, voltage input: -10 ...+10V / 0 ... 30V Accuracy: +/- 0.1%	(4 inputs)	on request	none
Analog input, 16bit resolution, current: 0-20mA	(4 inputs)	on request	none
MIPI CSI-2 / GMSL2 / FPDLinkIII Camera interface [1]		on request	on request
Wireless Connectivity			
Cellular 4G Module (LTE/UMTS/GSM) with built-in GNSS Telit LE910C4-WWX [6] (Dual nano SIM support)		3x SMA	none
Wireless LAN IEEE 802.11a/b/g/n/ac dual-band 2x2 MIMO & Bluetooth 5.0 Emwicon WMX6218 [6]		2x RP-SMA	none
High Accuracy GNSS Positioning Module w/ RTK & optional heading support [1] u-blox ZED F9R / F9P		on request	none
Technical Data			
Dimensions [mm] (housing, incl. mounting plate)		w256 x h95 x d127	w256 x h95 x d127
Net weight [gram]		~2800	~2750
Non isolated input voltage with ignition controller and reverse polarity protection	(M12 5P male a-coded)	9 ... 45VDC	9 ... 45VDC
Power consumption [3]		depends on power mode (15W, 30W, MAXN)	
Environmental Conditions			
Operating temperature [3]		−25°C ... +60°C	−25°C ... +60°C
Storage temperature		−25°C ... +80°C	−25°C ... +80°C
Ingress protection standard according to EN60529 (ISO 20653)		IP20	IP20
Conformal coating [4]		on request	on request
Road vehicles UNECE-R10 (E-mark) [5]		on request	on request
Shock		EN60068-2-27	EN60068-2-27
Vibration		EN60068-2-64	EN60068-2-64
EMI-Conformity		EN55032 / EN55035	EN55032 / EN55035
Safety (designed to meet)		EN62368-1	EN62368-1
Radio and Telecommunication (designed to meet)		RED	RED
MTBF @ 25°C ambient according to Telcordia SR-332, Environment GB, excluding battery		~280 000h	~355 000h

[1] Please contact factory for minimum order quantities
[2] Internal connector
[3] Depending on installation situation, interface connection and power mode. Please see user documentation.
[4] On all possible components (excl. NVIDIA Xavier Module, connectors and wireless devices)
[5] UN/ECE-R10 is the type-approval test for European automotive electronics. It includes a variety of testing including RF immunity and emissions, transient immunity and emissions.
[6] These LTE and Wi-Fi modules have replaced the previously used Sierra Wireless MC7455 and SparkLAN WPEB-263ACNI(BT) due to these modules going EOL (previous products: IPC/RMLA3K22-B203S)

AI Vehicle Computer

syslogic
industrial computing

Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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