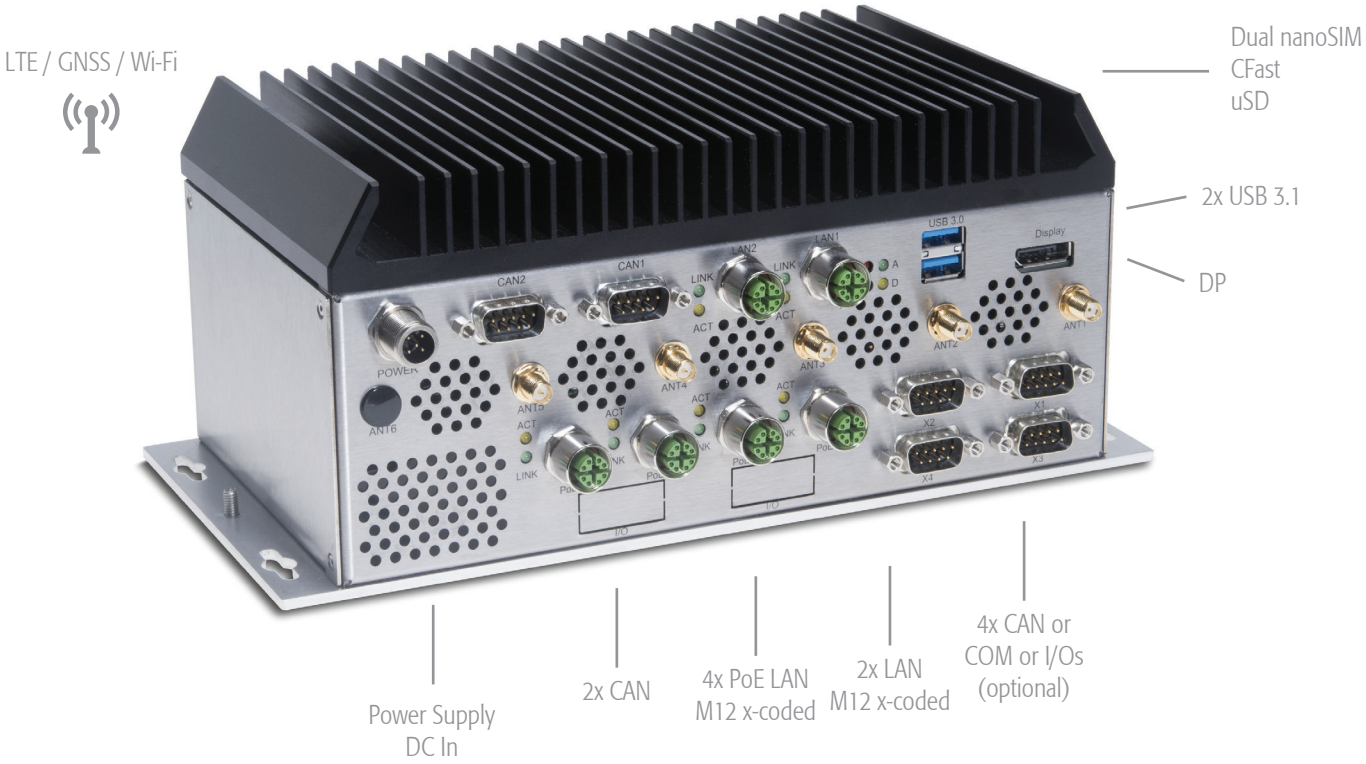
AI Vehicle Computer

COMPACT AI Vehicle Series

Intelligent Machine Learning Unit with NVIDIA Jetson AGX Xavier



IPC/COMPACT A3 - RML-DEV

This fanless RML-COMPACT-A3 DEV generation is based on the NVIDIA 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 AI applications and guarantees long term availability.

- **24/7 continuous operation**
- **Highly customizable interface options**
- **Extended AI Computing**
- **Power over Ethernet (PoE+), 48VDC out**
- **High Accuracy GNSS option**

NVIDIA. Linux for Tegra (L4T)

Product Highlights

Goldcap or battery RTC clock backup
No moving parts / passive cooling
Each LAN interface has its own dedicated NIC
Hardware watchdog
Temperature supervision
ESD- protection on all interfaces
Long term availability (fixed BOM)
Shock and vibration resistant

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
Socket for CFast
Ethernet, USB, Passive or Active CAN
Aluminum & Stainless steel housing

Markets / Applications

Production and Industrial Automation
Automated Guided Vehicles (AGV)
Transportation
Logistics
Robotics

Railway (rolling stock)

CE

Order Code		IPC/RMLA3K22-DEV1[1]	IPC/RMLA3K22-DEV2[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 socket [2]		1	1
CFast socket with retention frame [2]		1	1
Features			
Real time clock PC with Goldcap backup (charge holds 48h)		•	optional
Real time clock PC with battery backup Renata CR2477 (950 mAh)		optional	•
Hardware Watchdog & Temperature supervisor		•	•
Intelligent power management		•	•
Communication Interfaces			
Graphic interface		DisplayPort 1.2	DisplayPort 1.2
USB version 3.0	(Type A)	2	2
Internal USB version 2.0 OTG behind the cover	(micro USB Type AB)	1	1
Ethernet 10/100/1000Mbit	(M12 female x-coded)	2	2
Power over Ethernet - IEEE802.3at 10/100/1000Mbit PSE - Power sourcing equipment, directly producing 48VDC-out for PoE device	(M12 female x-coded)	4 (total max power: 39W)	4 (total max power: 39W)
Active/passive-CAN ESD protected, isolated	(DSUB9)	2	2
1-4 additional Active/passive-CAN ESD protected, isolated	(DSUB9)	optional	optional
Serial Interface RS232 / RS422/485 ESD protected	(DSUB9)	optional	optional
Digital I/O's, 24VDC	(up to 4 inputs & 4 outputs)	optional	optional
Analog input, 16bit resolution, voltage input: -10 ...+10V / 0 ... 30V Accuracy: +/- 0.1%	(4 inputs)	optional	optional
Analog input, 16bit resolution, current: 0-20mA	(4 inputs)	optional	optional
Mini PCIe socket [2]		1	1
I2C bus [2]		•	•
Buzzer		•	•
Wireless Connectivity			
Cellular 4G Module (GSM/UMTS/LTE) Telit or Sierra Wireless - M2M only!		2x SMA	2x SMA
Dual SIM Support (nanoSIM to mPCIe slot)		•	•
Positioning Wireless Module (GPS, Galileo, Glonass, Beidou) u-blox NEO-M8U Module incl. acceleration sensor		1x SMA	1x SMA
Acceleration / Motion Sensor STMicroelectronics ISM330DLC		•	•
Wireless LAN IEEE 802.11a/b/g/n/ac dual-band 2x2 MIMO		2x RP-SMA	2x RP-SMA
High Accuracy Positioning Wireless Module u-blox ZED-F9P		optional	optional
Technical Data			
Dimensions w230 x h110 x d127 mm (housing, incl. mounting)		•	•
Net weight in gram		tbd	tbd
Input voltage and reverse polarity protected	(M12 5P male a-coded)	16.8 ... 45VDC (isolated)	9 ... 36VDC
Interruption of voltage supply time: EN50155 Class S2		> 10ms	n/a
Current consumption typ. in mA @ 24V without Add-Ins, idle		~400	~400
Power consumption typ. in Watt @ 24V without Add-Ins, idle		~10	~10
Environmental Conditions			
Operating temperature [3]		–25°C ... +60°C	–25°C ... +60°C
Storage temperature		–25°C ... +80°C	–25°C ... +80°C
Protection standard		IP20	IP20
Conformal coating [4]		on request	on request
Shock (designed to meet)		EN61373	EN60068-2-27
Vibration (designed to meet)		EN61373	EN60068-2-64
EMI-Conformity (designed to meet)		EN50121-3-2	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 and optional interfaces		~280 000h	~280 000h

[1] Please contact factory for minimum order quantities
[2] Internal connector
[3] Depending on installation situation and interface connection. Please see user documentation. [4] On all possible components (excl. NVIDIA Xavier Module, connectors and wireless devices)

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