

AI Vehicle Computer

**COMPACT AI Vehicle Series**

Computer Vision Edge Unit with NVIDIA Jetson AGX Xavier



**IPC/COMPACT A3 - RSL**

This fanless RSL 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.

- 24/7 continuous operation
- Extended AI Computing
- Passively cooled, no moving parts
- Long term availability with fixed BOM



**Product Highlights**

- UNECE-R10 (E-mark) certified
- Positioning capabilities with dead reckoning
- Power ignition controller
- 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
- Automated Guided Vehicles (AGV)
- Transportation
- Robotics
- Off-highway vehicles

Order Code IPC/RSLA3K22-A106S<sup>1</sup> IPC/RSLA3K22-C103S<sup>1</sup>

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choose one

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 <sup>behind the cover</sup>		1	1
M.2 2280 Key M socket (for NVMe SSD) <sup>2</sup>		1	1
CFast socket with retention frame <sup>2</sup>		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 <sup>behind the cover</sup> (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 <sup>requires taller housing: h95mm</sup> (RJ45 / M12 female x-coded)		on request	on request
Serial RS232 / RS422/RS485 <sup>requires taller housing: h95mm</sup> (DSUB9)		on request	on request
Digital I/O's, 24VDC <sup>requires taller housing: h95mm</sup> (up to 4 inputs & 4 outputs)		on request	on request
Analog input <sup>1</sup> , 0-20mA or -10...+10V / 0... 30V (16bit resolution Accuracy: +/- 0.1%), <sup>requires taller housing: h95mm</sup> (4 inputs)		on request	on request
MIPI CSI-2 / GMSL2 / FPDLinkIII Camera interface <sup>1, requires taller housing: h95mm</sup>		on request	on request
Wireless Connectivity			
Cellular 4G Module (LTE/UMTS/GSM) with built-in GNSS Telit LE910C4-WMX <sup>6</sup> (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 <sup>6</sup>		2x RP-SMA	none
High Accuracy GNSS Positioning Module w/ RTK support <sup>1</sup> u-blox ZED F9R / F9P <sup>may require taller housing depending on final SKU</sup>		on request	none
Technical Data			
Dimensions [mm] (housing, incl. mounting plate)		w256 x h67.5 x d127	w256 x h67.5 x d127
Net weight [gram]		~2300	~2250
Non isolated input voltage with ignition controller and reverse polarity protection (M12 5P male a-coded)		9 ... 45VDC	9 ... 45VDC
Power consumption <sup>3</sup>		depends on power mode (15W, 30W, MAXN)	
Environmental Conditions			
Operating temperature <sup>3</sup>		-25°C ... +65°C	-25°C ... +65°C
Storage temperature		-25°C ... +80°C	-25°C ... +80°C
Ingress protection standard according to EN60529 (ISO 20653)		IP20	IP20
Conformal coating <sup>4</sup>		on request	on request
Road vehicles <sup>5</sup>		UNECE-R10 (E-mark)	UNECE-R10 (E-mark)
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 <sup>according to Telcordia SR-332, Environment GB, excluding battery</sup>		~325 000h	~435 000h

<sup>1</sup> Please contact factory for minimum order quantities

<sup>2</sup> Internal connector

<sup>3</sup> Depending on installation situation, interface connection and power mode. Please see user documentation.

<sup>4</sup> On all possible components (excl. NVIDIA Xavier Module, connectors and wireless devices)

<sup>5</sup> 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.

<sup>6</sup> 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/RSLA3K22-A103S)

Product specifications subject to change without notice. | All data is for information purposes only and not guaranteed for legal purposes. Information in this data sheet has been carefully checked and is believed to be accurate. However, no responsibility is assumed for inaccuracies. Please refer to the user documentation for additional product specification.

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