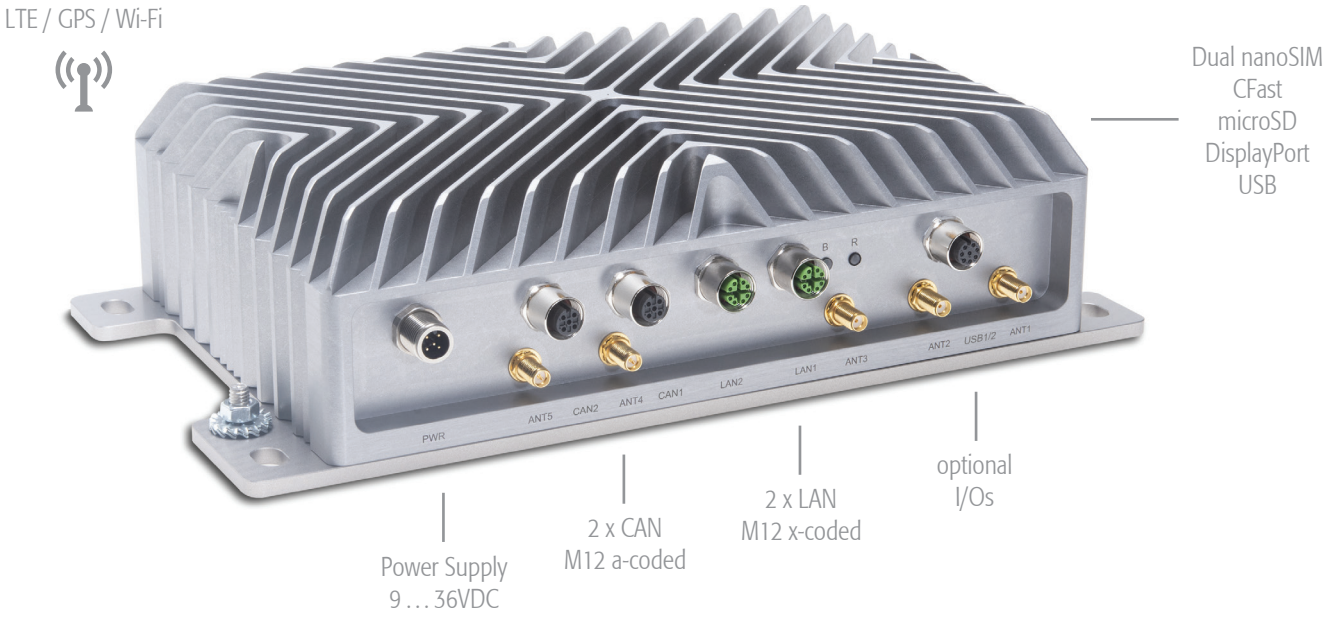
AI Rugged Computer

COMPACT AI Rugged Vehicle Series

Intelligent Machine Learning Unit with NVIDIA Jetson AGX Xavier



RPC/COMPACT RSL A3 Series

This fanless RPC COMPACT-A3 generation is based on the NVIDIA Jetson AGX Xavier processor module and offers a wide range of highly integrated interface options.
The ultra rugged and uncompromising design allows the use in the most demanding AI applications on mobile systems as well as in outdoor applications with harsh environmental conditions and guarantees long-term availability.

- **24/7 continuous operation**
- **Extended AI computing**
- **Milled aluminium housing**
- **IP67 Protection**
- **Shock and vibration resistant**

NVIDIA
Linux for Tegra (L4T)

CE E1

Product Highlights

Ultra rugged
Sealed housing, protection class IP67
Maintenance free
Goldcap or battery RTC backup
No moving parts / passively cooled
Long term availability (fixed BOM)

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: M.2 2280 & CFast
Ethernet, USB, Passive or Active CAN
Rugged M12 connectors

Industries

Agriculture
Construction
Transportation
Automated Guided Vehicles (AGV)
Oudoor applications

Order Code		RPC/RSLA3K22-B102S[1]	RPC/RSLA3K22-C102S[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 socket[2]		1	1
CFast socket with retention frame[2]		1	1
Features			
Inertial measurement unit (IMU) STMicroelectronics ISM330DHCXTR		•	•
Real time clock (RTC) with battery backup Renata CR2477 (950 mAh)		•	•
Real time clock (RTC) with goldcap backup (charge holds 48h)		optional	optional
Hardware Watchdog & Temperature supervisor		•	•
Buzzer		•	•
Communication Interfaces			
Graphic interface behind the cover		DisplayPort 1.2	DisplayPort 1.2
Internal USB version 2.0 OTG behind the cover	(micro USB Type AB)	1	1
USB version 2.0 behind the cover	(Type A)	2	2
Ethernet 10/100/1000Mbit	(M12 female x-coded)	2	2
Active/passive-CAN ESD protected, isolated	(M12 female a-coded)	2	2
Mini PCIe socket[2]		1	1
USB version 2.0	(M12 female a-coded)	optional	none
Power over Ethernet - IEEE802.3at 10/100/1000Mbit requires taller housing: h103mm	(M12 female x-coded)	optional	none
Serial RS232 / RS422/RS485	(M12 female a-coded)	optional	none
Digital I/O's, 24VDC	(up to 4 inputs & 4 outputs)	optional	none
Analog input, 16bit resolution, voltage input: -10 ...+10V / 0 ... 30V Accuracy: +/- 0.1%	(4 inputs)	optional	none
Analog input, 16bit resolution, current: 0-20mA	(4 inputs)	optional	none
I2C bus[2]		1	1
MIPI CSI-2 / GMSL2 / FPDLinkIII Camera interface[1]		on request	on request
Wireless Connectivity			
Cellular 4G Module (LTE/UMTS/GSM) Sierra Wireless MC7455 - M2M only! with dual nano SIM support	(full size Mini PCIe Slot)	2x SMA	none
Wireless LAN IEEE 802.11a/b/g/n/ac dual-band 2x2 MIMO Sparklan WPEB-263ACNI	(half size Mini PCIe Slot)	2x RP-SMA	none
GNSS Positioning Module (GPS, Galileo, Glonass, Beidou) u-blox NEO-M8U Module		1x SMA	none
High Accuracy GNSS Positioning Module w/ RTK support u-blox ZED F9P		optional	none
Technical Data			
Dimensions mm (housing, excl. mounting)		w250 x h75 x d170	w250 x h75 x d170
Net weight in gram		~3900	~3900
Non isolated input voltage, with Ignition controller, reverse polarity protected	(M12 5P male a-coded)	9 ... 36VDC	9 ... 36VDC
Power consumption typ. in Watt @ 24V without Add-Ins, idle		~14	~14
Environmental Conditions			
Operating temperature[3]		–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)		IP67 / IP69	IP67 /69
Conformal coating[4]		on request	on request
Road vehicles[5]		UN/ECE R10 (E-mark)	UN/ECE R10 (E-mark)
Agriculture ISOBUS incl. environmental conditions: ISO 15003		hardware ready	hardware ready
Shock (designed to meet)		EN60068-2-27	EN60068-2-27
Vibration (designd to meet)		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		~325 000h	~435 000h

[1] Please contact factory for minimum order quantities
[2] Internal connector
[3] Depending on installation situation, power consumption and interface connection. 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. It also includes a requirement for burst, surge, harmonics & flicker and provides advice and requirements for electrical vehicles.

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