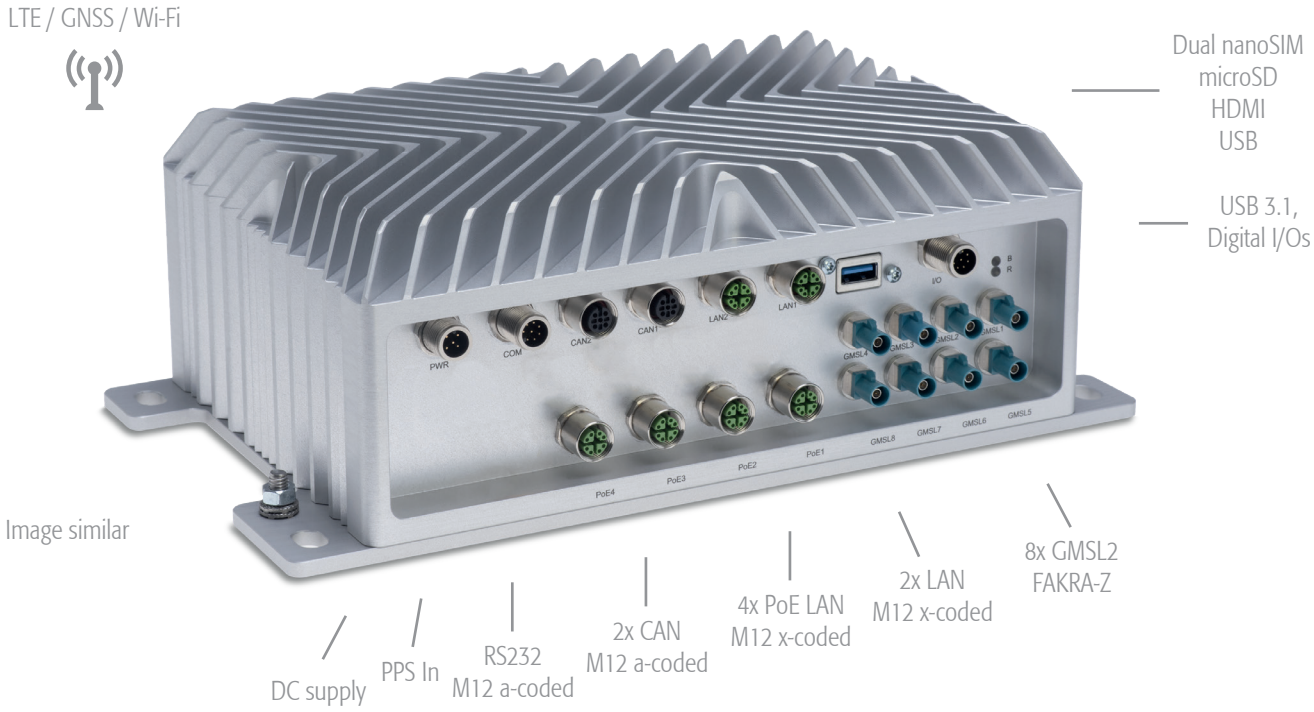
AI Rugged Computer

COMPACT AI Rugged Vehicle Series

Intelligent Machine Learning Unit with NVIDIA Jetson AGX Xavier

preliminary



RPC/COMPACT RML A3 (E2)

NEW PRODUCT

This fanless RPC COMPACT-A3 generation is based on the NVIDIA Jetson AGX Xavier (Industrial) 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**
- **8x camera inputs (GMSL2) with PoC**
- **Power Over Ethernet (PoE+), 48VDC out**
- **Sealed housing with IP67 protection**
- **Shock and vibration resistant**

NVIDIA
Linux for Tegra (L4T)

CE

Product Highlights

Ultra rugged
Sealed housing, protection class IP67
Power Ignition controller
No moving parts / passively cooled
Pressure equalization membrane
Resistance to chemicals

Product Features

AGX Xavier or AGX Xavier Industrial
NVMe M.2 2280 storage options
PoE+ Power over Ethernet
8x GMSL2 camera inputs
Ethernet, RS232, Digital I/O, CAN-FD
SAE J1939 support
Rugged M12 connectors
PPS Input

Industries

Agriculture
Construction
Transportation
Off-Highway Vehicles
Heavy Industry
Autonomous Mobile Robots (AMRs)
Oudoor applications

NEW PRODUCT

Order Code		RPC/RMLA3K22-M232S[1]	RPC/RMLA3K22-N232S[1]
Processor module / Performance			
NVIDIA Jetson AGX Xavier | **32GB RAM** | 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
NVIDIA Jetson AGX Xavier | **64GB RAM** | 512-core NVIDIA Volta™ GPU with 64 Tensor Cores		optional	optional
NVIDIA Jetson AGX **Xavier Industrial** | 512-Core NVIDIA Volta™ GPU (ECC) with 64 Tensor Cores with Cortex R5 and all safety relevant connections routed to a header, for a safety MCU on a daughterboard		optional	optional
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
Features			
Inertial measurement unit (IMU) STMicroelectronics ISM330DHCXTR		•	•
Real time clock (RTC) with battery backup Renata CR2477 (950 mAh)		•	•
Hardware Watchdog & Temperature supervisor, Buzzer		•	•
Communication Interfaces			
Display output behind the back service cover	(1x Standard HDMI connector)	HDMI 2.0	HDMI 2.0
Internal USB version 2.0 OTG behind the back service cover	(micro USB Type AB)	1	1
USB version 2.0 behind the back service cover	(Type A)	2	2
Ethernet 10/100/1000 Mbit BASE-T	(M12 female x-coded)	2	2
Power over Ethernet - IEEE802.3at 10/100/1000Mbit PSE - Power sourcing equipment, producing 48VDC out	(M12 female x-coded)	4 (total max power: 39W)	4 (total max power: 39W)
GMSL2 camera inputs, with Power over Coax (PoC), 12VDC+/-5%	(FAKRA-Z, IP67)	8 (max. camera power: 3W)	8 (max. camera power: 3W)
CAN 2.0A / CAN 2.0B (active/passive), CAN FD supported, isolated	(M12 female a-coded)	2	2
Digital I/O's, 12/24VDC	(M12 male a-coded)	4 in & 2 out	4 in & 2 out
Serial RS232 RX, TX, RTS, CTS, GND	(M12 male a-coded)	1	1
USB version 3.1 (5Gbit/s)	(Type A, IP67)	1	1
Mini PCIe socket [2]		1	1
I2C bus [2]		1	1
PPS Input 3.3V (LVCMOS), connected to Xavier GPIO	(SMA)	1	1
HDMI 2.0 display output [1], requires removal of RS232 or Digital I/Os	(1x Standard HDMI connector, IP67)	on request	on request
Wireless Connectivity			
Cellular 4G Module (LTE/UMTS/GSM) Sierra Wireless EM7455 - M2M only! with GNSS and dual nano SIM		3x SMA	none
Wireless LAN (Wi-Fi 5) 802.11a/b/g/n/ac dual-band 2x2 MIMO Intel Wireless-AC 9260		2x RP-SMA	none
Cellular 5G Module (4G/3G fallback) with GNSS Module tbd		optional	optional
Wireless LAN (Wi-Fi 6) 802.11ax/ac/a/b/g/n dual-band 2x2 MIMO requires Jetpack 5.0+		optional	optional
High Accuracy (RTK) GNSS positioning module w/ PPS [1,6], u-blox ZED F9P		optional	optional
Technical Data			
Dimensions mm (housing, excl. mounting)		w250 x h105 x d170	w250 x h105 x d170
Net weight in gram		~3950	~3900
Non isolated input voltage, with Ignition controller reverse polarity protected	(M12 5P male a-coded)	9 ... 45VDC	9 ... 45VDC
Power consumption [3]		~tbd	~tbd
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)		IP67	IP67
Conformal coating [4]		on request	on request
Road vehicles, UN/ECE R10 (E-mark) [5]		on request	on request
Shock ISO 15003 / EN60068-2-64 (designed to meet)		•	•
Vibration ISO 15003 / EN60068-2-64 (designed to meet)		•	•
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		~tbd	~tbd

[1] Please contact factory for minimum order quantities
[2] Internal connector
[3] Depending on installation situation, power mode and interface connection. 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] PPS Signal from the F9P GNSS module can be outputted externally (SMA connector), or provided internally on a GPIO.

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