

AI Rugged Computer

**COMPACT AI Rugged Vehicle Series**

Intelligent Machine Learning Unit with NVIDIA Jetson AGX Xavier

LTE / GPS / Wi-Fi



Dual nanoSIM  
CFast  
microSD  
DisplayPort  
USB

optional  
Serial RS232  
RS485

image similar

Power Supply M12 a-coded  
9 ... 36VDC

2 x CAN  
M12 x-coded

4 x PoE  
M12 x-coded

2 x LAN  
M12 x-coded

optional  
Digital I/O

Rugged AI Computer

**RPC/COMPACT RML 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
- Power Over Ethernet (PoE)
- IP67 Protection
- Shock and vibration resistant

**NVIDIA. Linux for Tegra (L4T)**

**Product Highlights**

- Ultra rugged
- Sealed housing (protection class IP67)
- Maintenance free
- Goldcap or battery RTC backup
- No moving parts / passive cooling
- ARM CPU core
- Hardware watchdog
- Temperature supervision
- ESD- protection on all interfaces
- 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
- Socket for CFast
- Ethernet, USB, Passive or Active CAN
- Power over Ethernet
- Rugged M12 connectors
- Milled aluminum housing

**Markets / Applications**

- Construction Vehicles
- Transportation
- Agriculture
- Automated Guided Vehicles (AGV)



Order Code RPC/RMLA3K22-A2025<sup>1</sup> RPC/RMLA3K22-B2025<sup>1</sup>

Rugged AI Computer

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 <sup>2</sup>	1	1
CFast socket with retention frame <sup>2</sup>	1	1
Features		
Real time clock PC with Goldcap backup	48h	48h
Real time clock PC with battery backup	optional	optional
Hardware Watchdog & Temperature supervisor	•	•
Intelligent power management	•	•
Communication Interfaces		
Graphic interface <sup>behind the cover</sup>	DisplayPort 1.2	DisplayPort 1.2
USB version 2.0 <sup>behind the cover</sup>	(Type A)	2
Internal USB version 2.0 OTG <sup>behind the cover</sup>	(micro USB Type AB)	1
Ethernet 10/100/1000Mbit	(M12 female x-coded)	2
PoE+ IEEE802.3at 10/100/1000Mbit	(M12 female x-coded)	4
Active/passive-CAN ESD protected, isolated	(M12 a-coded female)	optional
Digital I/O	(M12 a-coded)	optional
Serial Interface RS232 / RS422/485 ESD protected	(M12 a-coded female)	optional
Mini PCIe socket <sup>2</sup>		1
I2C bus <sup>2</sup>		•
Buzzer		•
MIPI CSI-2 / GMSL 1&2 Camera interface <sup>1</sup>	on request	on request
Wireless Connectivity		
Cellular 4G Module (LTE/UMTS/GSM) Sierra Wireless MC7455 - M2M only!	(2x SMA)	•
Dual SIM Support (nanoSIM)		•
GNSS Positioning Module (GPS, Galileo, Glonass, Beidou) u-blox NEO-M8U module	(1x SMA)	•
Wireless LAN IEEE 802.11a/b/g/n/ac dual-band 2x2 MIMO Sparklan WPEB-263ACNI	(2x RP-SMA)	•
Inertial measurement unit (IMU) STMicroelectronics ISM330DHCXTR		•
High Accuracy GNSS module <sup>1</sup> u-blox ZED F9P module	(1x SMA)	optional
Technical Data		
Dimensions mm (housing, excl. mounting)	w250 x h105 x d170	w250 x h105 x d170
Net weight in gram	~4400	~4450
Non isolated input voltage, with Ignition controller, reverse polarity protected	(M12 5P male a-coded)	9 ... 36VDC
Power consumption typ. in Watt @ 24V without Add-Ins, idle		~15
Environmental Conditions		
Operating temperature <sup>3</sup>	-25°C ... +55°C	-25°C ... +55°C
Storage temperature	-25°C ... +80°C	-25°C ... +80°C
Protection standard: IP67		•
Conformal coating <sup>1,4</sup>	on request	on request
Shock: EN60068-2-27 / EN61373		•
Vibration: EN60068-2-64 / EN61373		•
EMI-Conformity: designed to meet EN-50121-3-2 (IEC 61000-4-3 / IEC 61000-4-6)		•
Safety according to EN62368-1		•
Fire protection: DIN EN45545-2 HL3	optional	optional
Radio and Telecommunication: Designed to meet RED		•
MTBF ~280 000h @ 25°C ambient <sup>according to Telcordia SR-332, Environment GB, excluding battery and optional interfaces</sup>		•

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

<sup>2</sup> Internal connector

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

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

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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Version 1.3 | July 2020

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## 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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