

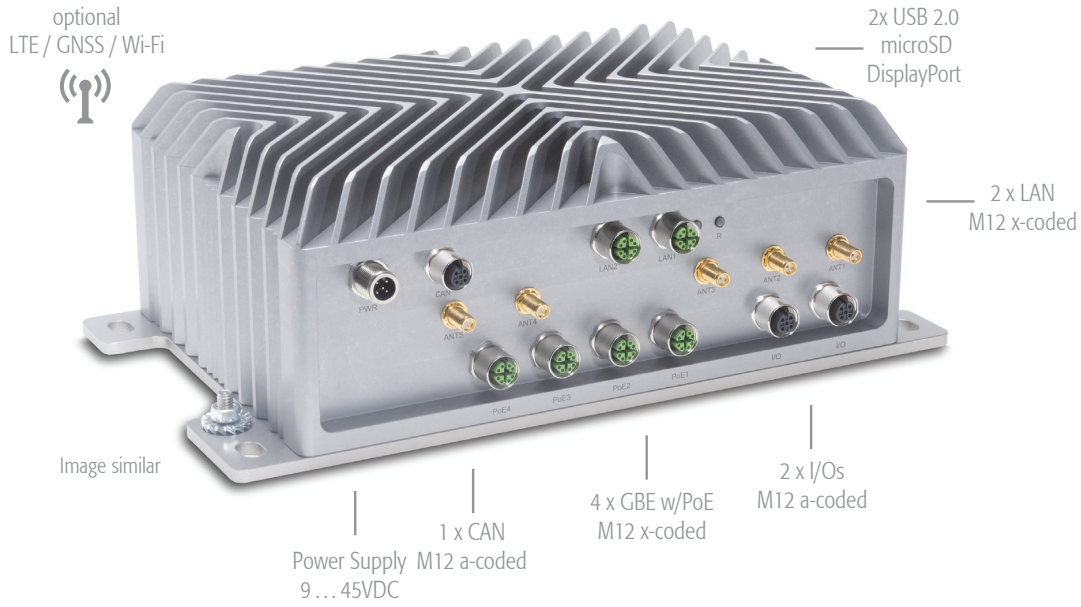
AI Embedded Box PCs

COMPACT AI Rugged Series

Intelligent AI inferencing unit with NVIDIA® Jetson Xavier™ NX

**preliminary
first draft**

Rugged AI Computer



RPC/COMPACT A3N

This fanless COMPACT A3N generation is based on the NVIDIA Jetson Xavier NX processor module. Xavier NX allows for supercomputer-level performance in a small form factor. This COMPACT A3N additionally offers a wide range of interface options.

The ultra rugged and uncompromising industrial design allows the implementation in the most harsh and demanding outdoor AI applications

- 24/7 continuous operation
- Shock and vibration resistant
- Power Over Ethernet (PoE)
- IP67 Protection
- Long term availability with fixed BOM

Linux for Tegra (L4T)

Product Highlights

- Ultra rugged
- Sealed housing
- Shock and vibration resistant
- Maintenance free
- No moving parts / passive cooling
- Hardware watchdog
- Temperature supervision
- ESD- protection on all interfaces
- Long term availability (fixed BOM)

Product Features

- 384-core NVIDIA Volta™ GPU with 48 Tensor Cores
- Ignition Controller
- Inertial measurement unit (IMU)
- M.2 slot for storage
- Ethernet, USB, active / passive CAN
- Power over Ethernet (PoE)
- Optional LTE & WiFi extensions
- Aluminum housing
- Protection class IP67

Markets / Applications

- Construction Vehicles
- Agriculture
- Transportation
- Automated Guided Vehicle (AGV)
- Computer vision
- machine learning
- Inference
- Perception
- Autonomous machines



Order Code RPC/RMLA3NI19-TBD¹

Rugged AI Computer

Processor module / Performance		
NVIDIA Jetson Xavier NX 384-core NVIDIA Volta™ GPU with 48 Tensor Cores		•
6-Core ARM v8.2 64-bit NVIDIA Carmel CPU		•
AI Performance (INT8)		21 TOPs
Memory / Storage		
Data Cache Size		2MB
128-bit LPDDR4x RAM soldered on board		8GB
eMMC 5.1 Flash Storage on board		16GB
M.2 2280 slot ² for SSD storage		1
microSD Card socket ²		1
Features		
Inertial measurement unit (IMU) STMicroelectronics ISM330DHCXTR		•
Real time clock PC compatible with battery backup Renata CR2477N (950mAh)		•
Hardware Watchdog & Temperature supervisor		•
Intelligent power management		•
Buzzer		•
Communication Interfaces		
Internal USB version 2.0 OTG <small>behind the cover</small>	(micro USB Type AB)	1
USB version 2.0 <small>behind the cover</small>	(Type A)	2
DisplayPort 1.4 interface <small>behind the cover</small>		1
HDMI 2.0 interface		1
Gbit Ethernet (1x native, 1x I210-IT)	(M12 female x-coded)	2
Gbit PoE+ IEEE802.3at 10/100/1000Mbit (4x I210-IT) <small>max Power at PSEs/PDs: 45W/39W</small>	(M12 female x-coded)	4
USB version 3.0	(Type A)	1
USB version 2.0	(Type A)	1
CAN active/passive, isolated	(M12 female a-coded)	1
Mini PCIe socket ²		2
I2C bus ²		1
USB version 2.0	(M12 female a-coded)	optional
Digital I/O, 24VDC	(4 inputs, 4 outputs - M12 female a-coded)	optional
Analog input, 16Bit resolution, voltage input: -10 ... +10V / 0 ... 30V <small>Accuracy: +/- 0.1%</small>	(4 inputs - M12 female a-coded)	optional
Analog input, current: 0-20mA	(4 inputs - M12 female a-coded)	optional
1-4 PEAK CAN (SJA1000 compatible) isolated	(M12 female a-coded)	optional
Serial Interface RS232 / RS422/485	(M12 female a-coded)	optional
MIPI CSI-2 / GMSL2 / FPDLinkIII Camera interface ¹		on request
Wireless Connectivity		
Cellular Module (LTE/UMTS/GSM) with GNSS positioning functionality Sierra Wireless MC7455 - M2M only!	(3x SMA)	optional
Wireless LAN IEEE 802.11a/b/g/n/ac dual-band 2x2 MIMO & Bluetooth 4.1	(2x RP-SMA)	optional
Technical Data		
Dimensions [mm] (housing, excl. mounting)		w250 x h105 x d170
Net weight [gram]		~4000
Non isolated Input voltage, with Ignition controller, reverse polarity protected	(M12 4P male a-coded)	9 ... 45VDC
Current consumption typ. in mA @ 24V without Add-Ins, idle		~400
Power consumption typ. in Watt @ 24V without Add-Ins, idle		~10
Environmental Conditions		
Operating temperature ³		-25°C ... +65°C
Storage temperature		-25°C ... +85°C
Ingress protection standard according to EN60529 (ISO 20653)		IP67 / IP69
Conformal coating ⁴		on request
Road vehicles		UN/ECE R10 (E-mark)
Shock		EN60068-2-27 / EN61373
Vibration		EN60068-2-64 / EN61373
EMI-Conformity		EN55032 / EN55035
Safety according to		EN62368-1
Radio and Telecommunication		Designed to meet RED
MTBF @ 25°C ambient <small>according to Telcordia SR-332, Environment GB, excluding battery and optional interfaces</small>		tbd

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. Xavier NX 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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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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