

AI Vehicle Computer

**COMPACT AI Vehicle Series**

Intelligent Machine Learning Unit with NVIDIA Jetson Xavier NX

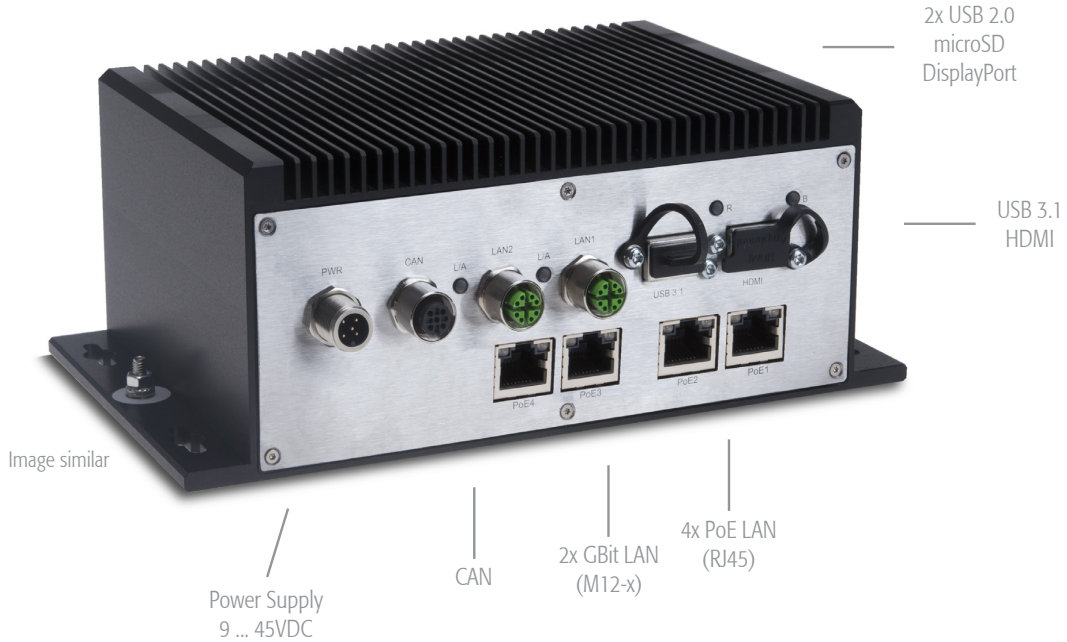


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**IPC/COMPACT A3N - RM**

This fanless COMPACT A3N generation is based on the NVIDIA Jetson Xavier NX 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.

- Power over Ethernet (PoE+), 48VDC out
- 24/7 continuous operation
- 6 total LAN Interfaces with individual NIC's
- Passively cooled, no moving parts
- Long term availability with fixed BOM



**Linux for Tegra (L4T)**

**Product Highlights**

- Maintenance free
- Power Ignition Controller
- Shock and vibration resistant
- Each LAN interface has its own dedicated NIC
- No moving parts / passively cooled

**Product Features**

- 384-core NVIDIA Volta™ GPU with 48 Tensor Cores
- 6-Core ARM v8.2 64-bit NVIDIA Carmel CPU
- 8GB / 16GB 128-bit LPDDR4x RAM
- M.2 NVMe slot for storage expansion up to 2TB
- USB 3.1 and HDMI 2.0 ports
- Gbit Ethernet, CAN 2.0 A/B
- Anodized aluminum & stainless steel housing

**Markets / Applications**

- Autonomous Mobile Robots (AMRs)
- Automotive
- Transportation
- Robotics
- CCTV



**Processor module / Performance**

|  |          |
|--|----------|
| NVIDIA Jetson Xavier NX   384-core NVIDIA Volta™ GPU with 48 Tensor Cores<br>6-Core ARM v8.2 64-bit NVIDIA Carmel CPU            | •        |
| NVIDIA Jetson Xavier NX (16GB RAM)   384-core NVIDIA Volta™ GPU with 48 Tensor Cores<br>6-Core ARM v8.2 64-bit NVIDIA Carmel CPU | optional |

**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 Key M socket (for NVMe SSD) <sup>5</sup> | 1    |
| microSD card socket <sup>2</sup>                  | 1    |

**Features**

|   |   |
|---|---|
| Real time clock (RTC) with battery backup Renata CR2477N (950mAh) | • |
| Hardware Watchdog & Temperature supervisor                        | • |
| Buzzer  | • |

**Communication Interfaces**

|   |                              |                        |
|---|------------------------------|------------------------|
| Display output <sup>1</sup> behind the service cover  |                              | DisplayPort 1.4        |
| Internal USB version 2.0 OTG <sup>1</sup> behind the service cover                                  | (micro USB Type AB)          | 1                      |
| USB version 2.0 <sup>1</sup> behind the service cover   | (Type A)                     | 2                      |
| Display output  |                              | HDMI 2.0               |
| USB version 3.1 (5 Gbit/s)  | (Type A)                     | 1                      |
| USB version 2.0 <sup>1</sup>  | (Type A)                     | optional               |
| Ethernet 10/100/1000 BASE-T (1x native, 1x I210-IT)   | (M12 female, x-coded)        | 2                      |
| Power over Ethernet - IEEE802.3at 10/100/1000Mbit   | (M12 female, x-coded)        | 4                      |
| PSE - Power sourcing equipment, producing 48VDC out   |                              | (total max power: 39W) |
| CAN 2.0A / CAN 2.0B (active/passive), CAN FD supported, isolated                                    | (M12 female, a-coded)        | 1                      |
| Mini PCIe socket <sup>2</sup> , used for extensions depending on configuration                      |                              | 2                      |
| I2C bus <sup>2</sup>  |                              | 1                      |
| Serial RS232 <sup>1</sup> , up to two ports available internally                                    | (M12 male, a-coded)          | on request             |
| Digital I/O's, 24VDC <sup>1</sup>   | (up to 4 inputs & 4 outputs) | on request             |
| Analog input1, 0-20mA or -10...+10V / 0... 30V <sup>1</sup> , (16bit resolution Accuracy: +/- 0.1%) | (4 inputs)                   | on request             |
| MIPI CSI-2 / GMSL2 / FPDLinkIII Camera interface <sup>1</sup>                                       |                              | on request             |

**Technical Data**

|  |                     |            |
|--|---------------------|------------|
| Dimensions [mm] (housing, excl. mounting)  | w182 x h80 x d130   |            |
| Dimensions [mm] (housing, incl. mounting)  | w218 x h80 x d130   |            |
| Net weight [gram]  | ~ 1900              |            |
| Non isolated input voltage, with ignition controller, reverse polarity protected | (M12 male, a-coded) | 9... 45VDC |
| Idle power consumption typ. in Watt @ 24V without Add-Ins                        |                     | ~ 12       |

**Environmental Conditions**

|   |                   |
|---|-------------------|
| Operating temperature <sup>3</sup>  | -25°C ... +65°C   |
| Storage temperature   | -25°C ... +85°C   |
| Ingress protection standard according to EN60529  | IP40              |
| Conformal coating <sup>4</sup>  | on request        |
| Road vehicles: UNECE-R10 (E-mark)   | on request        |
| Shock (designed to meet)  | EN60068-2-27      |
| Vibration (designed to meet)  | EN60068-2-64      |
| EMI-Conformity (designed to meet)   | EN55032 / EN55035 |
| Safety (designed to meet)   | EN62368-1         |
| MTBF @ 25°C ambient <sup>5</sup> according to Telcordia SR-332, Environment GB, excluding battery and SSD | ~ 415 000h        |

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

<sup>2</sup> Internal connector

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

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

<sup>5</sup> It is possible to equip the products with an Industrial grade Apacer PV210 NVMe SSD. Retrofitting an SSD is not possible by the user without complete disassembly. Use these part codes: IPC/RMA3NI19-G202S-01 = 128GB | IPC/RMA3NI19-G202S-02 = 256GB | IPC/RMA3NI19-G202S-05 = 512GB | IPC/RMA3NI19-G202S-10 = 1TB

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.

## Assured Systems

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