

## COMPACT AI Vehicle Series

Intelligent Machine Learning Unit with NVIDIA Jetson Xavier NX



## 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

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

optional

6-Core ARM v8.2 64-bit NVIDIA Carmel CPU

**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 <small>behind the service cover</small>	DisplayPort 1.4
Internal USB version 2.0 OTG <small>behind the service cover</small>	(micro USB Type AB ) 1
USB version 2.0 <small>behind the service cover</small>	(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 <small>according to Telcordia SR-332, Environment GB, excluding battery and SSD</small>	~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.

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All rights reservedSyslogic Datentechnik AG  
Täferstrasse 28  
CH-5405 Baden DättwilFor further information and support:  
info@syslogic.com  
support@syslogic.com  
www.syslogic.com+41 56 200 90 40  
+49 7741 9671-420  
Switzerland (Headquarters)  
Germany and Austria

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