

AI Vehicle Computer

## COMPACT AI Vehicle Series

Intelligent Machine Learning Unit with NVIDIA Jetson Xavier NX

preliminary

optional  
LTE / GPS / Wi-Fi



2x USB 2.0  
microSD  
DisplayPort

Image similar



Power Supply  
9 ... 45VDC

CAN

2x GBit LAN

USB 3.1

HDMI

AI Vehicle Computer

## IPC/COMPACT A3N - RS

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.

- 24/7 continuous operation
- Extended AI Computing
- Passively cooled, no moving parts
- Long term availability with fixed BOM



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

### Product Highlights

Maintenance free  
Power Ignition Controller  
Shock and vibration resistant  
LTE, GNSS and Wi-Fi connectivity options  
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 128-bit LPDDR4x RAM soldered on board  
M.2 slot for storage expansion  
Ethernet, USB, Passive or Active CAN  
LTE, GNSS & WiFi  
Aluminum & Stainless steel housing  
Protection class IP65

### Industries / Applications

Automated Guided Vehicles (AGV)  
Automotive  
Transportation  
Robotics  
Agriculture  
Construction Vehicles



Order Code IPC/RSA3NI19-E102S<sup>1</sup> IPC/RSA3NI19-F102S<sup>1</sup>

## 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	21 TOPs

## Memory / Storage

Data Cache Size	2MB	2MB
128-bit LPDDR4x RAM soldered on board	8GB	8GB
eMMC 5.1 Flash Storage on board	16GB	16GB
M.2 2280 slot for SSD storage up to 2TB <sup>2</sup>	1	1
microSD card socket <sup>2</sup>	1	1

## Features

Inertial measurement unit (IMU) STMicroelectronics ISM330DHCXTR	•	•
Real time clock (RTC) with battery backup Renata CR2477N (950mAh)	•	•
Hardware Watchdog & Temperature supervisor	•	•

## Communication Interfaces

Graphic interface <small>behind the service cover</small>		DisplayPort 1.4	DisplayPort 1.4
Internal USB version 2.0 OTG <small>behind the service cover</small>	(micro USB Type AB)	1	1
USB version 2.0 <small>behind the service cover</small>	(Type A)	2	2
Graphic interface		HDMI 2.0	HDMI 2.0
USB version 3.1	(Type A)	1	1
USB version 2.0 <sup>1</sup>	(Type A)	optional	optional
Ethernet 10/100/1000Mbit (1x native, 1x I210-IT)	(M12 female, x-coded)	2	2
Active/passive-CAN ESD protected, isolated	(M12 female, a-coded)	1	1
Serial RS232 <sup>2</sup>		2	2
Mini PCIe socket <sup>2</sup>		2	2
I2C bus <sup>2</sup>		1	1
Buzzer		1	1
MIPI CSI-2 / GMSL2 / FPDLinkIII Camera interface <sup>1</sup>		on request	on request

## Wireless Connectivity

Cellular Module (LTE/UMTS/GSM) with GNSS positioning functionality Sierra Wireless MC7455 - M2M only! (Dual nano SIM)	none	3x SMA
Wireless LAN IEEE 802.11a/b/g/n/ac dual-band 2x2 MIMO & Bluetooth 4.1 SparkLAN WPEB-263ACNI(BT)	none	2x RP-SMA
High precision GNSS module <sup>1</sup> u-blox ZED-F9P module	optional	optional

## Technical Data

Dimensions [mm] (housing, excl. mounting)	w182 x h55 x d127	w182 x h55 x d127
Dimensions [mm] (housing, incl. mounting)	w218 x h55 x d127	w218 x h55 x d127
Net weight [gram]	~ 1400	~ 1500
Non isolated input voltage, with ignition controller, reverse polarity protected	(M12 male, a-coded)	9... 45VDC
Current consumption typ. in mA @ 24V without Add-Ins, idle	~ 400	~ 400
Power consumption typ. in Watt @ 24V without Add-Ins, idle	~ 10	~ 10

## Environmental Conditions

Operating temperature <sup>3</sup>	-25°C ... +65°C	-25°C ... +65°C
Storage temperature	-25°C ... +85°C	-25°C ... +85°C
Ingress protection standard according to EN60529	IP65	IP65
Conformal coating <sup>4</sup>	on request	on request
Shock (designed to meet)	EN60068-2-27	EN60068-2-27
Vibration (designed to meet)	EN60068-2-64	EN60068-2-64
EMI-Conformity (designed to meet)	EN55032 / EN55035	EN55032 / EN55035
Safety (designed to meet)	EN62368-1	EN62368-1
Radio and Telecommunication (designed to meet)	RED	RED
MTBF @ 25°C ambient <small>excluding battery</small>	tbd	tbd

<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)

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industrial computing

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