

AI Vehicle Computer

**COMPACT AI Vehicle Series**

Intelligent Machine Learning Unit with NVIDIA Jetson Xavier NX

preliminary

optional  
LTE / GPS / Wi-Fi




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



**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>

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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    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)

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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