

AI Vehicle Computer

## COMPACT AI Vehicle Series

Computer Vision Edge Unit with NVIDIA Jetson Xavier NX

optional  
LTE / GNSS / 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 / 16GB 128-bit LPDDR4x RAM  
M.2 NVMe slot for storage expansion up to 2TB  
USB 3.1 and HDMI 2.0 ports with dust covers  
Ethernet, passive or active CAN  
LTE, GNSS & WiFi  
Aluminum & Stainless steel housing  
Protection class IP65

### Industries / Applications

Autonomous Mobile Robots (AMRs)  
Automotive  
Transportation  
Robotics  
Agriculture  
Construction Vehicles



Order Code IPC/RSA3NI19-E102S<sup>1,5</sup> IPC/RSA3NI19-F106S<sup>1,5</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		
NVIDIA Jetson Xavier NX (16GB RAM)   384-core NVIDIA Volta™ GPU with 48 Tensor Cores	optional	optional
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 Key M socket (for NVMe SSD) <sup>5</sup>	1	1
microSD card socket <sup>2</sup>	1	1
Features		
Real time clock (RTC) with battery backup Renata CR2477N (950mAh)	•	•
Inertial measurement unit (IMU) <sup>1</sup> STMicroelectronics ISM330DHCXTR	on request	on request
Communication Interfaces		
Display output <sup>behind the service cover</sup>	DisplayPort 1.4	DisplayPort 1.4
Internal USB version 2.0 OTG <sup>behind the service cover</sup>	(micro USB Type AB )	1
USB version 2.0 <sup>behind the service cover</sup>	(Type A )	2
Display output	HDMI 2.0	HDMI 2.0
USB version 3.1 (5 Gbit/s)	(Type A )	1
Ethernet 10/100/1000 BASE-T (1x native, 1x I210-IT)	(M12 female, x-coded)	2
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
Serial RS232 <sup>1</sup>	(M12 female, a-coded)	optional
USB version 2.0 <sup>1</sup>	(M12 female, a-coded)	optional
MIPI CSI-2 / GMSL2 / FPDLinkIII Camera interface <sup>1</sup>	on request	on request
Wireless Connectivity		
Cellular 4G Module (LTE/UMTS/GSM) with built-in GNSS Telit LE910C4-WWW <sup>6</sup> (Dual nano SIM support)	none	3x SMA
Wireless LAN IEEE 802.11a/b/g/n/ac dual-band 2x2 MIMO & Bluetooth 5.0 Emwicon WMX6218 <sup>6</sup>	none	2x RP-SMA
High Accuracy GNSS Positioning Module w/ RTK & optional heading support <sup>1</sup> u-blox ZED F9R / F9P	on request	on request
Technical Data		
Dimensions [mm] (housing, excl. mounting)	w182 x h60 x d127	w182 x h60 x d127
Dimensions [mm] (housing, incl. mounting)	w218 x h60 x d127	w218 x h60 x d127
Net weight [gram]	~ 1600	~ 1650
Non isolated input voltage, with ignition controller, reverse polarity protected	(M12 male, a-coded)	9... 45VDC
Power consumption typ. in Watt @ 24V without Add-Ins, idle	~ 8.5	~ 8.5
Environmental Conditions		
Operating temperature <sup>3</sup>	-25°C ... +70°C	-25°C ... +70°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
EMC-Conformity	EN55032 / EN55035	EN55032 / EN55035
Safety (designed to meet)	EN62368-1	EN62368-1
Radio and Telecommunication (designed to meet)	n/a	RED
MTBF @ 25°C ambient <sup>according to Telcordia SR-332, Environment GB, excluding battery and SSD</sup>	~ 530 000h	~ 375 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/RSA3NI19-[E/F]10xS-01 = 120GB | IPC/RSA3NI19-[E/F]10xS-02 = 240GB | IPC/RSA3NI19-[E/F]10xS-05 = 480GB | IPC/RSA3NI19-[E/F]10xS-10 = 960GB

<sup>6</sup>These LTE and Wi-Fi modules have replaced the previously used Sierra Wireless MC7455 and SparkLAN WPEB-263ACNI(BT) due to these modules going EOL (previous products: IPC/RSA3NI19-F102S)

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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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