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

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

CE

Your partner for reliable embedded computer solutions.

AI Vehicle Computer

	Order Code	IPC/RSA3NI19-E102S[1,5]	IPC/RSA3NI19-F106S[1,5]
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 6-Core ARM v8.2 64-bit NVIDIA Carmel CPU		optional	optional
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) [5]		1	1
microSD card socket [2]		1	1
Features			
Real time clock (RTC) with battery backup Renata CR2477N (950mAh)		•	•
Inertial measurement unit (IMU) [1] STMicroelectronics ISM330DHCXTR		on request	on request
Communication Interfaces			
Display output behind the service cover		DisplayPort 1.4	DisplayPort 1.4
Internal USB version 2.0 OTG behind the service cover	(micro USB Type AB)	1	1
USB version 2.0 behind the service cover	(Type A)	2	2
Display output		HDMI 2.0	HDMI 2.0
USB version 3.1 (5 Gbit/s)	(Type A)	1	1
Ethernet 10/100/1000 BASE-T (1x native, 1x I210-IT)	(M12 female, x-coded)	2	2
CAN 2.0A / CAN 2.0B (active/passive), CAN FD supported, isolated	(M12 female, a-coded)	1	1
Mini PCIe socket [2, used for extensions depending on configuration]		2	2
Serial RS232 [1]	(M12 female, a-coded)	optional	optional
USB version 2.0 [1]	(M12 female, a-coded)	optional	optional
MIPI CSI-2 / GMSL2 / FPDLinkIII Camera interface [1]		on request	on request
Wireless Connectivity			
Cellular 4G Module (LTE/UMTS/GSM) with built-in GNSS Telit LE910C4-WWX [6] (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 [6]		none	2x RP-SMA
High Accuracy GNSS Positioning Module w/ RTK & optional heading support [1] 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	9... 45VDC
Power consumption typ. in Watt @ 24V without Add-Ins, idle		~8.5	~8.5
Environmental Conditions			
Operating temperature [3]		−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 [4]		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 according to Telcordia SR-332, Environment GB, excluding battery and SSD		~530 000h	~375 000h

[1] Please contact factory for minimum order quantities
[2] Internal connector
[3] Depending on installation situation and interface connection. Please see user documentation.
[4] On all possible components (excl. Xavier NX module, connectors and wireless devices)
[5] 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
[6] 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)

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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