AI Vehicle Computer
COMPACT AI Vehicle Series
Intelligent Machine Learning Unit with NVIDIA Jetson Xavier NX

preliminary first draft

optional
LTE / GPS / Wi-Fi

2x USB 2.0
microSD
DisplayPort

USB 3.1
HDMI

Image similar

Power Supply
9 ... 45VDC

CAN

2x GBit LAN

4x PoE LAN

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

NVIDIA. Linux for Tegra (L4T)

Product Highlights

Maintenance free
Power Ignition Controller
Shock and vibration resistant
Each LAN interface has its own dedicated NIC
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
Optional LTE, GNSS & WiFi extensions
Aluminum & Stainless steel housing
Protection class IP65

Markets / Applications

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

CE

Your partner for reliable embedded computer and display solutions.

AI Vehicle Computer

		Order Code	IPC/RMA3NI19-E202S[1]	IPC/RMA3NI19-F202S[1]
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[2]			1	1
microSD card socket[2]			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 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
Graphic interface			HDMI 2.0	HDMI 2.0
USB version 3.1	(Type A)		1	1
USB version 2.0[1]	(Type A)		optional	optional
Ethernet 10/100/1000Mbit (1x native, 1x I210-IT)	(M12 female, x-coded)		2	2
Power over Ethernet - IEEE802.3at 10/100/1000Mbit PSE - Power sourcing equipment, producing 48VDC out	(M12 female, x-coded)		4 (total max power: 39W)	4 (total max power: 39W)
Active/passive-CAN ESD protected, isolated	(M12 female, a-coded)		1	1
Serial RS232 / RS422/RS485	(DSUB9)		optional	optional
Digital I/O's, 24VDC	(up to 4 inputs & 4 outputs)		optional	optional
Analog input, 16bit resolution, voltage input: -10 ...+10V / 0 ... 30V Accuracy: +/- 0.1%	(4 inputs)		optional	optional
Analog input, 16bit resolution, current: 0-20mA	(4 inputs)		optional	optional
Mini PCIe socket[2]			2	2
I2C bus[2]			1	1
Buzzer			1	1
MIPI CSI-2 / GMSL2 / FPDLinkIII Camera interface[1]			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[1] u-blox ZED-F9P module			optional	optional
Technical Data				
Dimensions [mm] (housing, excl. mounting)			w182 x h75 x d127	w182 x h75 x d127
Dimensions [mm] (housing, incl. mounting)			w218 x h75 x d127	w218 x h75 x d127
Net weight [gram]			~1600	~1600
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			~13	~13
Environmental Conditions				
Operating temperature[3]			−25°C ... +60°C	−25°C ... +60°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
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 excluding battery			tbd	tbd

[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)

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.

US

sales@assured-systems.com

Sales: +1 347 719 4508
Support: +1 347 719 4508

1309 Coffeen Ave
Ste 1200
Sheridan
WY 82801
USA

EMEA

sales@assured-systems.com

Sales: +44 (0)1785 879 050
Support: +44 (0)1785 879 050

Unit A5 Douglas Park
Stone Business Park
Stone
ST15 0YJ
United Kingdom

VAT Number: 120 9546 28
Business Registration Number: 07699660