AI Embedded Box PCs

COMPACT AI Rugged Series

Intelligent Machine Learning Unit with NVIDIA Jetson Xavier NX

preliminary

Rugged AI Computer

RPC/COMPACT A3N

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 AI applications and guarantees long term availability.

- **24/7 continuous operation**
- **Extended AI Computing**
- **IP67 protection**
- **Product lifecycle management**
- **Long term availability with fixed BOM**

NVIDIA Linux for Tegra (L4T)

Product Highlights

Ultra rugged
Sealed housing
Shock and vibration resistant
Maintenance free
No moving parts / passively cooled
Hardware watchdog
Temperature supervision
Long term availability (fixed BOM)

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 NVMe slot for storage expansion up to 2TB
USB 3.0 and HDMI 2.0 ports with dust covers
Ethernet, active / passive CAN
Optional LTE & WiFi extensions
Aluminum housing
Ingress Protection class IP67

Markets / Applications

Automated Guided Vehicles (AGV)
Agriculture
Automotive
Transportation
Construction Vehicles
Cleantech
Outdoor applications

CE

Your partner for reliable embedded computer and display solutions.

Order Code		RPC/RSA3NI19-A102S[1]	RPC/RSA3NI19-B102S[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 NVMe SSD Cactus Technologies 270P Series (R/W: 1.6GB/s | 1.0GB/s)		256GB	256GB
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
Active/passive-CAN ESD protected, isolated	(M12 female, a-coded)	1	1
Serial RS232[2]		2	2
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, incl. mounting)		w245 x h75 x d165	w245 x h75 x d165
Net weight [gram]		~2000	~2000
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		~10	~10
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		IP67	IP67
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
estimated 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)

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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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