

AI Embedded Box PCs

COMPACT AI Rugged 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

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, protection class IP67
- Maintenance free
- Power Ignition controller
- No moving parts / passively cooled
- Pressure equalization membrane
- Resistance to chemicals
- 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 or 16 GB 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, active / passive CAN
- Optional LTE & WiFi extensions
- Aluminum housing

Markets / Applications

- Autonomous Mobile Robots (AMRs)
- Agriculture
- Construction
- Transportation
- Off-Highway Vehicles
- Heavy Industry
- Outdoor applications



Order Code [RPC/RSA3NI19-A102S^{1,5}](#) [RPC/RSA3NI19-B106S^{1,5}](#)

Rugged AI Computer

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	on request	on request
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) 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		
Video output <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
USB version 2.0 <small>behind the service cover</small>	(Type A)	2
Video 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 ² , used for extensions depending on configuration		2
Serial RS232 ¹	(M12 female, a-coded)	on request
USB version 2.0 ¹	(M12 female, a-coded)	on request
MIPI CSI-2 / GMSL2 / FPDLinkIII Camera interface ¹		on request
Wireless Connectivity		
Cellular 4G Module (LTE/UMTS/GSM) with built-in GNSS <small>Telit LE910C4-WWX⁶ (Dual nano SIM support)</small>	none	3x SMA
Wireless LAN IEEE 802.11a/b/g/n/ac dual-band 2x2 MIMO & Bluetooth 5.0 <small>Emwicon WMX6218⁶</small>	none	2x RP-SMA
High Accuracy GNSS Positioning Module w/ RTK & optional heading support ¹ <small>u-blox ZED F9R / F9P</small>	on request	on request
Technical Data		
Dimensions [mm] (housing, incl. mounting)	w245 x h66 x d165	w245 x h66 x d165
Net weight [gram]	~2300	~2350
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
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
EMC-Conformity	EN55032 / EN55035	EN55032 / EN55035
Safety (designed to meet)	EN62368-1	EN62368-1
Radio and Telecommunication (designed to meet)	n/a	RED
estimated MTBF @ 25°C ambient <small>according to Telcordia SR-332, Environment GB, excluding battery and SSD</small>	~ 550 000h	~ 385 000h

¹Please contact factory for minimum order quantities

²Internal connector

³Depending on installation situation and interface connection. Please see user documentation.

⁴On all possible components (excl. Xavier NX module, connectors and wireless devices)

⁵It 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:

RPC/RSA3NI19-[A/B]102S-01 = 120GB | RPC/RSA3NI19-[A/B]10xS-02 = 240GB | RPC/RSA3NI19-[A/B]10xS-05 = 480GB | RPC/RSA3NI19-[A/B]10xS-10 = 960GB

⁶These 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: RPC/RSA3NI19-B102S)

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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