

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

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, 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 ^{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
USB version 2.0 ^{behind the service cover}	(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 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, 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	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	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 ^{according to Telcordia SR-332, Environment GB, excluding battery and SSD}	~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)

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Syslogic Datentechnik AG
Täferstrasse 28
CH-5405 Baden Dättwil

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For further information and support:

info@syslogic.com
support@syslogic.com
www.syslogic.com

+41 56 200 90 40
+49 7741 9671-420

Switzerland (Headquarters)
Germany and Austria

syslogic
industrial computing

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