

## COMPACT AI Rugged Series

Intelligent Machine Learning Unit with NVIDIA Jetson Xavier NX

preliminary

optional  
LTE / GNSS / Wi-Fi



2x USB 2.0  
microSD  
DisplayPort

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  
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



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 <sup>5</sup>	1	1
microSD Card socket <sup>2</sup>	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 <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	1
USB version 2.0 <small>behind the service cover</small> (Type A)	2	2
Graphic interface	HDMI 2.0	HDMI 2.0
USB version 3.1 (Type A)	1	1
USB version 2.0 <sup>1</sup> (Type A)	optional	optional
Ethernet 10/100/1000Mbit (1x native, 1x I210-IT)	(M12 female, x-coded)	2
Active/passive-CAN ESD protected, isolated	(M12 female, a-coded)	1
Serial RS232 <sup>2</sup>	2	2
Mini PCIe socket <sup>2</sup>	2	2
I2C bus <sup>2</sup>	1	1
Buzzer	1	1
MIPI CSI-2 / GMSL2 / FPDLinkIII Camera interface <sup>1</sup>	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 <sup>1</sup> u-blox ZED-F9P module	optional	optional
Technical Data		
Dimensions [mm] (housing, incl. mounting)	w245 x h66 x d165	w245 x h66 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 <sup>3</sup>	-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 <sup>4</sup>	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 <small>excluding battery</small>	tbd	tbd

<sup>1</sup> Please contact factory for minimum order quantities

<sup>2</sup> Internal connector

<sup>3</sup> Depending on installation situation and interface connection. Please see user documentation

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

<sup>5</sup> It is possible to equip the products with a Cactus Technologies 270P Series NVMe SSD from the factory, use these part codes:

RPC/RSA3NI19-[A/B]102S-01 = 128GB | RPC/RSA3NI19-[A/B]102S-02 = 256GB | RPC/RSA3NI19-[A/B]102S-05 = 512GB | RPC/RSA3NI19-[A/B]102S-10 = 1TB

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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