

COMPACT AI Rugged Series

Intelligent Machine Learning Unit with NVIDIA Jetson Xavier NX

preliminary

optional
LTE / GPS / Wi-Fi



2x USB 2.0
microSD
DisplayPort

USB 3.1, HDMI

image similar

Power Supply 9 ... 45VDC
RS232
CAN
2x Gbit LAN
4x Gbit PoE
DIO

RPC/COMPACT RML 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
- Shock and vibration resistant
- Power Over Ethernet (PoE)
- IP67 Protection
- 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 slot for storage
Ethernet, USB, active / passive CAN
Optional 5G, LTE & WiFi extensions
Aluminum housing
Ingress Protection class IP67

Markets / Applications

Heavy Industry
Agriculture
AMRs and AGVs
Outdoor applications

Computer vision
Machine learning
Sensor fusion
Autonomous machines



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 ² for SSD storage up to 2TB	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 <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
Gbit Ethernet (1x native, 1x I210-IT)	(M12 female x-coded)	2
Gbit PoE+ IEEE802.3at 10/100/1000Mbit (4x I210-IT) <small>max Power at PSEs/PDs: 45W/39W</small>	(M12 female x-coded)	4
Active/passive-CAN ESD protected, isolated	(M12 female, a-coded)	1
Digital I/O, 24VDC	(M12 male, a-coded)	4 inputs, 4 outputs
Serial RS232 ²		1
Mini PCIe socket ²		2
I2C bus ²		1
Buzzer		1
USB version 2.0 ¹ (M12 female, a coded)	optional	optional
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 support)	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
Cellular 5G module (4G/3G fallback) Sierra Wireless EM9191 - M2M only! (4x SMA)	optional	optional
Technical Data		
Dimensions [mm] (housing, incl. mounting)	w245 x h75 x d165	w245 x h75 x d165
Net weight [gram]	~4000	~4000
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 / IP69 ⁵	IP67 / IP69 ⁵
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 <small>excluding battery</small>	tbd	tbd

¹ Please contact factory for minimum order quantities² Internal connector³ Depending on installation situation and interface connection. Please see user documentation⁴ On all possible components (excl. Xavier NX module, connectors and wireless devices)⁵ Requires additional protective caps for IP69

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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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