

## COMPACT AI Rugged Series

Intelligent Machine Learning Unit with NVIDIA Jetson Xavier NX



## 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		
NVIDIA Jetson Xavier NX <b>(16GB RAM)</b>   384-core NVIDIA Volta™ GPU with 48 Tensor Cores	optional	optional
6-Core ARM v8.2 64-bit NVIDIA Carmel CPU		
AI Performance (INT8)	21 TOPs	21 TOPs

**Memory / Storage**

128-bit LPDDR4x RAM soldered on board	8GB	8GB
eMMC 5.1 Flash Storage on board	16GB	16GB
M.2 2280 slot <sup>2</sup> for NVMe SSD up to 2TB	1	1
microSD Card socket <sup>2</sup>	1	1

**Features**

Real time clock (RTC) with battery backup Renata CR2477N (950mAh)	•	•
Hardware Watchdog & Temperature supervisor	•	•
Buzzer	1	1

**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
Ethernet 10/100/1000 Mbit BASE-T (1x native, 1x I210-IT)	(M12 female x-coded)	2	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	4
CAN 2.0A / CAN 2.0B (active/passive), CAN FD supported, isolated	(M12 female, a-coded)	1	1
Digital I/O, 24VDC	(M12 male, a-coded)	4 inputs, 2 outputs	4 inputs, 2 outputs
Serial RS232 <sup>2</sup>	(M12 male, a-coded)	1	1
Mini PCIe socket <sup>2</sup>		2	2
I2C bus <sup>2</sup>		1	1
USB version 2.0 <sup>1</sup>	(M12 female, a coded)	optional	optional
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 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 with optional heading <sup>1</sup> u-blox ZED-F9 module		optional	optional
Cellular 5G module (4G/3G fallback) Quectel RM500Q-AE - M2M only! (4x SMA)		optional	optional

**Technical Data**

Dimensions [mm] (housing, excl. mounting)		w250 x h85 x d170	w250 x h85 x d170
Net weight [gram]		~ 3600	~ 3650
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 / IP69	IP67 / IP69
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)