AI Rugged Computer

COMPACT AI Rugged Vehicle Series

Intelligent Machine Learning Unit with NVIDIA Jetson AGX Xavier

LTE / GPS / Wi-Fi

Dual nanoSIM
CFast
microSD
DisplayPort
USB

optional
Serial RS232
RS485

image similar

Power Supply
9 … 36VDC

2 x CAN
M12 a-coded

4 x PoE
M12 x-coded

2 x LAN
M12 x-coded

optional
Digital I/O

RPC/COMPACT RML A3 Series

This fanless RPC COMPACT-A3 generation is based on the NVIDIA Jetson AGX Xavier processor module and offers a wide range of highly integrated interface options.
The ultra rugged and uncompromising design allows the use in the most demanding AI applications on mobile systems as well as in outdoor applications with harsh environmental conditions and guarantees long-term availability.

- **24/7 continuous operation**
- **Extended AI Computing**
- **Power Over Ethernet (PoE)**
- **IP67 Protection**
- **Shock and vibration resistant**

NVIDIA Linux for Tegra (L4T)

Product Highlights

Ultra rugged
Sealed housing (protection class IP67)
Maintenance free
Goldcap or battery RTC backup
No moving parts / passive cooling
ARM CPU core
Hardware watchdog
Temperature supervision
ESD- protection on all interfaces
Long term availability (fixed BOM)

Product Features

512-core NVIDIA Volta™ GPU
with 64 Tensor Cores
8-Core ARM v8.2 64-bit NVIDIA Carmel CPU
32GB 256-Bit LPDDR4x RAM soldered on board
Socket for CFast
Ethernet, USB, Passive or Active CAN
Power over Ethernet
Rugged M12 connectors
Milled aluminum housing

Markets / Applications

Construction Vehicles
Transportation
Agriculture
Automated Guided Vehicles (AGV)

CE

Your partner for reliable embedded computer and display solutions.

	Order Code	RPC/RMLA3K22-A202S[1]	RPC/RMLA3K22-B202S[1]
Processor module / Performance			
NVIDIA Jetson AGX Xavier (32GB) | 512-core NVIDIA Volta™ GPU with 64 Tensor Cores 8-Core ARM v8.2 64-bit NVIDIA Carmel CPU		•	•
AI Performance		32 TOPs	32 TOPs
Memory / Storage			
Data L3 Cache Size		4MB	4MB
256-Bit LPDDR4x RAM soldered on board		32GB	32GB
eMMC 5.1 Flash Storage on board		32GB	32GB
microSD Card socket		1	1
M.2 socket [2]		1	1
CFast socket with retention frame [2]		1	1
Features			
Real time clock PC with Goldcap backup		48h	48h
Real time clock PC with battery backup		optional	optional
Hardware Watchdog & Temperature supervisor		•	•
Intelligent power management		•	•
Communication Interfaces			
Graphic interface behind the cover		DisplayPort 1.2	DisplayPort 1.2
USB version 2.0 behind the cover	(Type A)	2	2
Internal USB version 2.0 OTG behind the cover	(micro USB Type AB)	1	1
Ethernet 10/100/1000Mbit	(M12 female x-coded)	2	2
PoE+ IEEE802.3at 10/100/1000Mbit	(M12 female x-coded)	4	4
Active/passive-CAN ESD protected, isolated	(M12 a-coded female)	optional	2
Digital I/O	(M12 a-coded)	optional	optional
Serial Interface RS232 / RS422/485 ESD protected	(M12 a-coded female)	optional	optional
Mini PCIe socket [2]		1	1
I2C bus [2]		•	•
Buzzer		•	•
MIPI CSI-2 / GMSL 1&2 Camera interface [1]		on request	on request
Wireless Connectivity			
Cellular 4G Module (LTE/UMTS/GSM) Sierra Wireless MC7455 - M2M only!	(2x SMA)	•	•
Dual SIM Support (nanoSIM)		•	•
GNSS Positioning Module (GPS, Galileo, Glonass, Beidou) u-blox NEO-M8U module	(1x SMA)	•	•
Wireless LAN IEEE 802.11a/b/g/n/ac dual-band 2x2 MIMO Sparklan WPEB-263ACNI	(2x RP-SMA)	•	•
Inertial measurement unit (IMU) STMicroelectronics ISM330DHCXTR		•	•
High Accuracy GNSS module [1] u-blox ZED F9P module	(1x SMA)	optional	optional
Technical Data			
Dimensions mm (housing, excl. mounting)		w250 x h105 x d170	w250 x h105 x d170
Net weight in gram		~4400	~4450
Non isolated input voltage, with Ignition controller, reverse polarity protected	(M12 5P male a-coded)	9 ... 36VDC	9 ... 36VDC
Power consumption typ. in Watt @ 24V without Add-Ins, idle		~15	~15
Environmental Conditions			
Operating temperature [3]		−25°C ... +55°C	−25°C ... +55°C
Storage temperature		−25°C ... +80°C	−25°C ... +80°C
Protection standard: IP67		•	•
Conformal coating [1,4]		on request	on request
Shock: EN60068-2-27 / EN61373		•	•
Vibration: EN60068-2-64 / EN61373		•	•
EMI-Conformity: designed to meet EN-50121-3-2 (IEC 61000-4-3 / IEC 61000-4-6)		•	•
Safety according to EN62368-1		•	•
Fire protection: DIN EN45545-2 HL3		optional	optional
Radio and Telecommunication: Designed to meet RED		•	•
MTBF ~280 000h @ 25°C ambient according to Telcordia SR-332, Environment GB, excluding battery and optional interfaces		•	•

[1] Please contact factory for minimum order quantities
[2] Internal connector
[3] Depending on installation situation, power consumption and interface connection. Please see user documentation.
[4] On all possible components (excl. NVIDIA Xavier Module, connectors and wireless devices)

For further information and support:
info@syslogic.com
support@syslogic.com
www.syslogic.com

+41 56 200 90 40   Switzerland (Headquarters)
+49 7741 9671-420   Germany and Austria

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