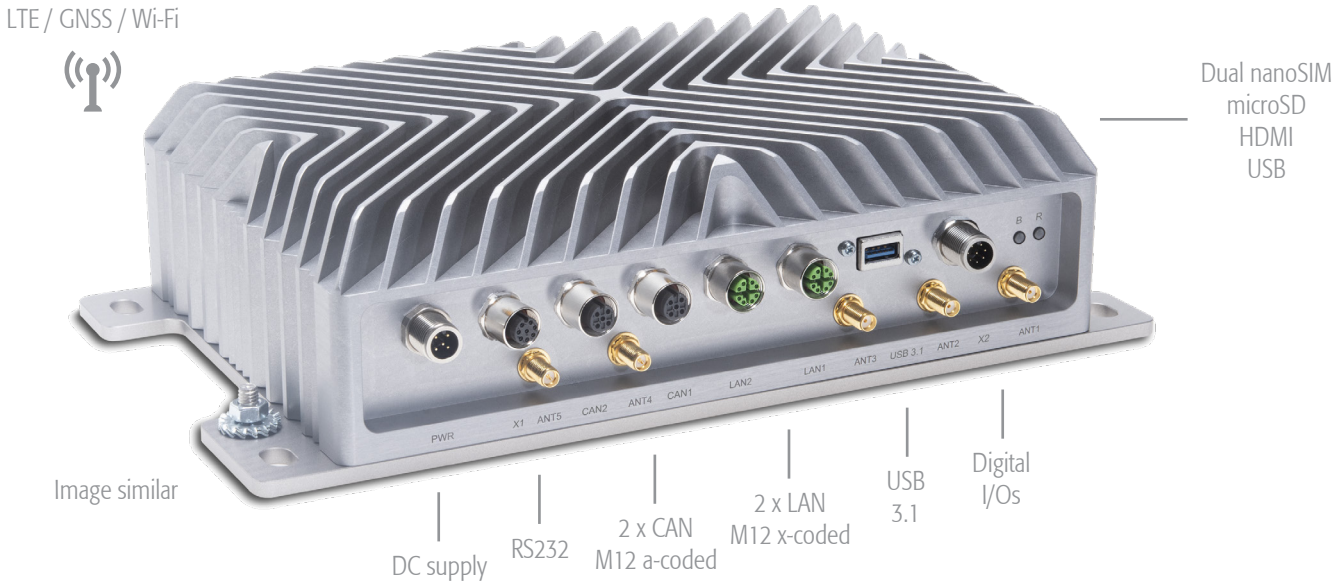
AI Rugged Computer

COMPACT AI Rugged Vehicle Series

Intelligent Machine Learning Unit with NVIDIA Jetson AGX Xavier



RPC/COMPACT RSL A3 (E2)

NEW PRODUCT

This fanless RPC COMPACT-A3 generation is based on the NVIDIA Jetson AGX Xavier (Industrial) 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**
- **Wide temperature range –40°C ... +70°C**
- **Sealed housing with IP67 / IP69 protection**
- **Shock and vibration resistant**

NVIDIA
Linux for Tegra (L4T)

CE

Product Highlights

Ultra rugged
Sealed housing, protection class IP67 & IP69
Maintenance free
Power Ignition controller
No moving parts / passively cooled
Pressure equalization membrane
Resistance to chemicals
Long term availability (fixed BOM)

Product Features

AGX Xavier or AGX Xavier Industrial
512-core NVIDIA Volta™ GPU
8-Core ARM v8.2 64-bit NVIDIA Carmel CPU
32GB 256-Bit LPDDR4x RAM soldered on board
NVMe M.2 2280 storage options
Ethernet, RS232, Digital I/O, USB 3.1, CAN-FD
SAE J1939 support
PPS Input
Rugged M12 connectors

Industries

Agriculture
Construction
Transportation
Off-Highway Vehicles
Heavy Industry
Autonomous Mobile Robots (AMRs)
Oudoor applications

NEW PRODUCT

		Order Code	RPC/RSLA3K22-M132S[1]	RPC/RSLA3K22-N132S[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			•	•
NVIDIA Jetson AGX Xavier | 64GB | 512-core NVIDIA Volta™ GPU with 64 Tensor Cores 8-Core ARM v8.2 64-bit NVIDIA Carmel CPU			optional	optional
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 2280 Key M socket (for NVMe SSD) [2]			1	1
Features				
Real time clock (RTC) with battery backup Renata CR2477 (950 mAh)			•	•
Hardware Watchdog & Temperature supervisor, Buzzer			•	•
Communication Interfaces				
Display output behind the back service cover	(1x Standard HDMI connector)		HDMI 2.0	HDMI 2.0
Internal USB version 2.0 OTG behind the back service cover	(micro USB Type AB)		1	1
USB version 2.0 behind the back service cover	(Type A)		2	2
Ethernet 10/100/1000 Mbit BASE-T	(M12 female x-coded)		2	2
CAN 2.0A / CAN 2.0B (active/passive), CAN FD supported, isolated	(M12 female a-coded)		2	2
Digital I/O's, 12/24VDC[1]	(M12 male a-coded)		4 in & 2 out	4 in & 2 out
Serial RS232 RX, TX, RTS, CTS, GND	(M12 female a-coded)		1	1
USB version 3.1 (5Gbit/s)	(Type A, IP67)		1	1
Mini PCIe socket [2] - used for wireless extensions depending on configuration			1	1
I2C bus [2]			1	1
PPS Input 3.3V (LVCMOS), connected to Xavier GPIO	(1x SMA)		optional	optional
HDMI 2.0 display output [1], requires removal of RS232 or Digital I/Os	(1x Standard HDMI connector, IP67)		optional	optional
Power over Ethernet - IEEE802.3at 10/100/1000Mbit taller housing: h103mm	(M12 female x-coded)		optional	optional
GMSL2 / FPDLinkIII camera inputs [1], taller housing: h103mm	(4x/8x FAKRA-Z)		optional	optional
Wireless Connectivity				
Cellular 4G module (LTE/UMTS/GSM) Sierra Wireless EM7455 - M2M only! with GNSS and dual nano SIM (full size Mini PCIe)			3x SMA	optional
Wireless LAN (Wi-Fi 5) 802.11a/b/g/n/ac dual-band 2x2 MIMO Sparklan WNFB-263ACNI (half size Mini PCIe)			2x RP-SMA	optional
Cellular 5G module (4G/3G fallback) with GNSS Module tbd			optional	optional
Wireless LAN (Wi-Fi 6) 802.11ax/ac/a/b/g/n dual-band 2x2 MIMO requires Jetpack 5.0+			optional	optional
High Accuracy (RTK) GNSS positioning module w/ PPS [1,6], u-blox ZED F9P			optional	optional
Technical Data				
Dimensions mm (housing, excl. mounting)			w250 x h75 x d170	w250 x h75 x d170
Net weight in gram			~3050	~3000
Non isolated input voltage, with Ignition controller reverse polarity protected	(M12 5P male a-coded)		9 ... 45VDC	9 ... 45VDC
Power consumption [3]			depends on power mode (15W, 30W, MAXN)	
Environmental Conditions				
Operating temperature [3]			–25°C ... +65°C	–25°C ... +65°C
Storage temperature			–25°C ... +80°C	–25°C ... +80°C
Ingress protection standard according to EN60529 (ISO 20653)			IP67 / IP69	IP67 / IP69
Conformal coating [4]			on request	on request
Road vehicles, UN/ECE R10 (E-mark) [5]			on request	on request
Agriculture ISOBUS (CAN J1939)			hardware ready	hardware ready
Shock ISO 15003 / EN60068-2-64 (designed to meet)			•	•
Vibration ISO 15003 / EN60068-2-64 (designed to meet)			•	•
EMI-Conformity			EN55032 / EN55035	EN55032 / EN55035
Safety (designed to meet)			EN62368-1	EN62368-1
Radio and Telecommunication (designed to meet)			RED	RED
MTBF @ 25°C ambient according to Telcordia SR-332, Environment GB, excluding battery			~325 000h	~400 000

[1] Please contact factory for minimum order quantities
[2] Internal connector
[3] Depending on installation situation, power mode and interface connection. See user documentation.
[4] On all possible components (excl. NVIDIA Xavier Module, connectors and wireless devices)
[5] UN/ECE-R10 is the type-approval test for European automotive electronics. It includes a variety of testing including RF immunity and emissions, transient immunity and emissions.
[6] PPS Signal from the F9P GNSS module can be outputted externally (SMA connector), or provided internally on a GPIO.

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industrial computing

NEW PRODUCT

		Order Code	RPC/RSLA3K21-M132E[1]	RPC/RSLA3K21-N132E[1]
Processor module / Performance				
NVIDIA Jetson AGX Xavier Industrial | 512-Core NVIDIA Volta™ GPU (ECC) with 64 Tensor Cores 8-Core ARM v8.2 64-bit NVIDIA Carmel CPU			•	•
Relevant safety MCU connections on a header, ready for a daughterboard			•	•
AI Performance			30 TOPs	30 TOPs
Memory / Storage				
Data L3 Cache Size			4MB	4MB
256-Bit LPDDR4x ECC RAM soldered on board			32GB	32GB
eMMC 5.1 Flash Storage on board			64GB	64GB
microSD Card socket			1	1
M.2 2280 Key M socket (for NVMe SSD) [2]			1	1
Features				
Inertial measurement unit (IMU) STMicroelectronics ISM330DHCXTR			•	•
Real time clock (RTC) with battery backup Renata CR2477 (950 mAh)			•	•
Hardware Watchdog & Temperature supervisor, Buzzer			•	•
Communication Interfaces				
Display output behind the back service cover	(1x Standard HDMI connector)		HDMI 2.0	HDMI 2.0
Internal USB version 2.0 OTG behind the back service cover	(micro USB Type AB)		1	1
USB version 2.0 behind the back service cover	(Type A)		2	2
Ethernet 10/100/1000 Mbit BASE-T	(M12 female x-coded)		2	2
CAN 2.0A / CAN 2.0B (active/passive), CAN FD supported, isolated	(M12 female a-coded)		2	2
Digital I/O's, 12/24VDC[1]	(M12 male a-coded)		4 in & 2 out	4 in & 2 out
Serial RS232 RX, TX, RTS, CTS, GND	(M12 female a-coded)		1	1
USB version 3.1 (5Gbit/s)	(Type A, IP67)		1	1
Mini PCIe socket [2] - used for wireless extensions depending on configuration			1	1
I2C bus [2]			1	1
PPS Input 3.3V (LVCMOS), connected to Xavier GPIO	(1x SMA)		optional	optional
HDMI 2.0 display output [1], requires removal of RS232 or Digital I/Os	(1x Standard HDMI connector, IP67)		optional	optional
Power over Ethernet - IEEE802.3at 10/100/1000Mbit taller housing: h103mm	(M12 female x-coded)		optional	optional
GMSL2 / FPDLinkIII camera inputs [1], taller housing: h103mm	(4x/8x FAKRA-Z)		optional	optional
Wireless Connectivity				
Cellular 4G Module (LTE/UMTS/GSM) Sierra Wireless EM7455 - M2M only! with GNSS and dual nano SIM (full size Mini PCIe)			3x SMA	optional
Wireless LAN (Wi-Fi 5) 802.11a/b/g/n/ac dual-band 2x2 MIMO Sparklan WNFB-263ACNI (half size Mini PCIe)			2x RP-SMA	optional
Cellular 5G Module (4G/3G fallback) with GNSS Module tbd			optional	optional
Wireless LAN (Wi-Fi 6) 802.11ax/ac/a/b/g/n dual-band 2x2 MIMO requires Jetpack 5.0+			optional	optional
High Accuracy (RTK) GNSS positioning module w/ PPS [1,6], u-blox ZED F9P			optional	optional
Technical Data				
Dimensions mm (housing, excl. mounting)			w250 x h75 x d170	w250 x h75 x d170
Net weight in gram			~3050	~3000
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Power consumption [3]			depends on power mode (15W, 30W, MAXN)	
Environmental Conditions				
Operating temperature [3]			–40°C ... +70°C	–40°C ... +70°C
Storage temperature			–40°C ... +85°C	–40°C ... +85°C
Ingress protection standard according to EN60529 (ISO 20653)			IP67 / IP69	IP67 / IP69
Conformal coating [4]			on request	on request
Road vehicles, UN/ECE R10 (E-mark) [5]			on request	on request
Agriculture ISOBUS (CAN J1939)			hardware ready	hardware ready
Shock ISO 15003 / EN60068-2-64 (designed to meet)			•	•
Vibration ISO 15003 / EN60068-2-64 (designed to meet)			•	•
EMI-Conformity			EN55032 / EN55035	EN55032 / EN55035
Safety (designed to meet)			EN62368-1	EN62368-1
Radio and Telecommunication (designed to meet)			RED	RED
MTBF @ 25°C ambient according to Telcordia SR-332, Environment GB, excluding battery			~315 000h	~380 000

[1] Please contact factory for minimum order quantities
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[3] Depending on installation situation, power mode and interface connection. See user documentation.
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[5] UN/ECE-R10 is the type-approval test for European automotive electronics. It includes a variety of testing including RF immunity and emissions, transient immunity and emissions.
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