AI Rugged Computer

COMPACT AI Rugged Vehicle Series

Computer Vision Edge Unit with NVIDIA Jetson AGX Xavier

LTE / GNSS / Wi-Fi

Dual nanoSIM
CFast
microSD
DisplayPort
USB

Image similar
RPC/RSLA3K22-D102S

PWR   ANT5   CAN2   ANT4   CAN1   LAN2   LAN1   ANT3   ANT2   DIO   ANT1

DC supply

2 x CAN
M12 a-coded

2 x LAN
M12 x-coded

Digital
I/Os

RPC/COMPACT RSL A3 Series

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
with 64 Tensor Cores
8-Core ARM v8.2 64-bit NVIDIA Carmel CPU
32GB 256-Bit LPDDR4x RAM soldered on board
Storage options: NVMe M.2 2280 & CFast
Ethernet, USB, Passive or Active CAN
Rugged M12 connectors

Industries

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

Your partner for reliable embedded computer solutions.

		Order Code RPC/RSLA3K22-B104S[1]	RPC/RSLA3K22-C102S[1]	RPC/RSLA3K22-D102S[1]
Processor module / Performance				
NVIDIA Jetson AGX Xavier (JAX) | 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	32 TOPs
Memory / Storage				
Data L3 Cache Size		4MB	4MB	4MB
256-Bit LPDDR4x RAM soldered on board		32GB	32GB	32GB
eMMC 5.1 Flash Storage on board		32GB	32GB	32GB
microSD Card socket		1	1	1
M.2 2280 Key M socket (for NVMe SSD) [2]		1	1	1
CFast socket with retention frame [2]		1	1	1
Features				
Real time clock (RTC) with battery backup _{Renata CR2477 (950 mAh)}		•	•	•
Inertial measurement unit (IMU)[1] STMicroelectronics ISM330DHCXTR		on request	on request	on request
Communication Interfaces				
Graphic interface behind the back service cover		DisplayPort 1.2	DisplayPort 1.2	DisplayPort 1.2
Internal USB version 2.0 OTG behind the back service cover	(micro USB Type AB)	1	1	1
USB version 2.0 behind the back service cover	(Type A)	2	2	2
Ethernet 10/100/1000 Mbit BASE-T	(M12 female x-coded)	2	2	2
CAN 2.0A / CAN 2.0B (active/passive), CAN FD supported, isolated	(M12 female a-coded)	2	2	2
Power over Ethernet - IEEE802.3at 10/100/1000Mbit RMLA3 product	(M12 female x-coded)	on request	on request	on request
USB version 2.0	(M12 female a-coded)	on request	on request	none
Digital I/O's, 12/24VDC[1]	(M12 male a-coded)	on request	on request	4 in & 2 out
Analog input[1], 0-20mA or -10...+10V / 0... 30V (16bit resolution Accuracy: +/- 0.1%)	(up to 4 inputs)	on request	on request	none
Mini PCIe socket [2] - used for extensions depending on configuration		1 full-size / 1 half-size	1 full-size / 1 half-size	1 full-size / 1 half-size
I2C bus [2]		1	1	1
Wireless Connectivity				
Cellular 4G Module (LTE/UMTS/GSM) with built-in GNSS [6] Telit LE910C4-WWX (Dual nano SIM support)		3x SMA	none	none
Wireless LAN IEEE 802.11a/b/g/n/ac dual-band 2x2 MIMO & Bluetooth 5.0 [6] Emwicon WMX6218		2x RP-SMA	none	none
High Accuracy GNSS Positioning Module w/ RTK support [1] u-blox ZED F9R / F9P		on request	none	none
Cellular 5G Module (4G/3G fallback) with GNSS		on request	on request	on request
Wireless LAN (Wi-Fi 6) 802.11ax/ac/a/b/g/n 2T2R		on request	on request	on request
Technical Data				
Dimensions mm (housing, excl. mounting)		w250 x h75 x d170	w250 x h75 x d170	w250 x h75 x d170
Net weight in gram		~3050	~3000	~3050
Non isolated input voltage, with Ignition controller reverse polarity protected	(M12 5P male a-coded)	9 ... 45VDC	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	−25°C ... +65°C
Storage temperature		−25°C ... +80°C	−25°C ... +80°C	−25°C ... +80°C
Ingress protection standard according to EN60529 (ISO 20653)		IP67 / IP69	IP67 / IP69	IP67 / IP69
Conformal coating[4]		on request	on request	on request
Road vehicles, UN/ECE R10 (E-mark) [5]		on request	on request	on request
Agriculture ISOBUS		hardware ready	hardware ready	hardware ready
Shock ISO 15003 / EN60068-2-64 (designed to meet)		•	•	•
Vibration ISO 15003 / EN60068-2-64 (desigend to meet)		•	•	•
EMI-Conformity		EN55032 / EN55035	EN55032 / EN55035	EN55032 / EN55035
Safety (designed to meet)		EN62368-1	EN62368-1	EN62368-1
Radio and Telecommunication (designed to meet)		RED	RED	RED
MTBF @ 25°C ambient according to Telcordia SR-332, Environment GB, excluding battery		~325 000h	~435 000h	~400 000

choose one (note at right of rows "USB version 2.0" through "Analog input")

[1] Please contact factory for minimum order quantities

[2] Internal connector

[3] Depending on installation situation, interface connection and power mode. Please 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] These LTE and Wi-Fi modules have replaced the previously used Sierra Wireless MC7455 and SparkLAN WPEB-263ACNI(BT) due to these modules going EOL (previous products: RPC/RSLA3K22-B102S)

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

syslogic
industrial computing

Order Code	RPC/RSLA3K21-B104E[1]	RPC/RSLA3K21-C102E[1]	RPC/RSLA3K21-D102E[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	•	•	•
Dual Arm® Cortex®-R5 in lockstep (Safety Cluster Engine)	•	•	•
AI Performance (INT8)	30 TOPs	30 TOPs	30 TOPs
Memory / Storage			
Data L3 Cache Size	4MB	4MB	4MB
QSPI NOR Flash Storage	64MB	64MB	64MB
256-Bit LPDDR4x ECC RAM soldered on board	32GB	32GB	32GB
eMMC 5.1 Flash Storage on board	64GB	64GB	64GB
microSD Card socket	1	1	1
M.2 2280 Key M socket (for NVMe SSD) [2]	1	1	1
CFast socket with retention frame [2]	1	1	1
Features			
Real time clock (RTC) with battery backup	not possible	not possible	not possible
Inertial measurement unit (IMU)[1] STMicroelectronics ISM330DHCXTR	on request	on request	on request
Communication Interfaces			
Graphic interface behind the back service cover	DisplayPort 1.2	DisplayPort 1.2	DisplayPort 1.2
Internal USB version 2.0 OTG behind the back service cover (micro USB Type AB)	1	1	1
USB version 2.0 behind the back service cover (Type A)	2	2	2
Ethernet 10/100/1000 Mbit BASE-T (M12 female x-coded)	2	2	2
CAN 2.0A / CAN 2.0B (active/passive), CAN FD supported, isolated (M12 female a-coded)	2	2	2
Power over Ethernet - IEEE802.3at 10/100/1000Mbit RMLA3 product (M12 female x-coded)	on request	on request	on request
USB version 2.0 (M12 female a-coded)	on request	on request	none
Digital I/O's, 12/24VDC[1] (M12 male a-coded)	on request	on request	4 in & 2 out
Analog input[1], 0-20mA or -10...+10V / 0... 30V (16bit resolution Accuracy: +/- 0.1%) (up to 4 inputs)	on request	on request	none
Mini PCIe socket [2] - used for extensions depending on configuration	1 full-size / 1 half-size	1 full-size / 1 half-size	1 full-size / 1 half-size
I2C bus [2]	1	1	1
Wireless Connectivity			
Cellular 4G Module (LTE/UMTS/GSM) with built-in GNSS Telit LE910C4-WWX [6] (Dual nano SIM support)	3x SMA	none	none
Wireless LAN IEEE 802.11a/b/g/n/ac dual-band 2x2 MIMO & Bluetooth 5.0 Emwicon WMX6218 [6]	2x RP-SMA	none	none
High Accuracy GNSS Positioning Module w/ RTK & optional heading support [1] u-blox ZED F9R / F9P	on request	none	none
Cellular 5G Module (4G/3G fallback) with GNSS	on request	on request	on request
Wireless LAN (Wi-Fi 6) 802.11ax/ac/a/b/g/n 2T2R	on request	on request	on request
Technical Data			
Dimensions mm (housing, excl. mounting)	w250 x h75 x d170	w250 x h75 x d170	w250 x h75 x d170
Net weight in gram	~3050	~3000	~3050
Non isolated input voltage, with Ignition controller reverse polarity protected (M12 5P male a-coded)	9 ... 45VDC	9 ... 45VDC	9 ... 45VDC
Power consumption [3]	depends on power mode (15W, 30W, MAXN)		
Environmental Conditions			
Operating temperature [3]	−40°C ... +70°C	−40°C ... +70°C	−40°C ... +70°C
Storage temperature	−40°C ... +85°C	−40°C ... +85°C	−40°C ... +85°C
Ingress protection standard according to EN60529 (ISO 20653)	IP67 / IP69	IP67 / IP69	IP67 / IP69
Conformal coating [4]	on request	on request	on request
Road vehicles, UN/ECE R10 (E-mark) [5]	on request	on request	on request
Agriculture ISOBUS	hardware ready	hardware ready	hardware ready
Shock ISO 15003 / EN60068-2-64 (designed to meet)	•	•	•
Vibration ISO 15003 / EN60068-2-64 (desigend to meet)	•	•	•
EMI-Conformity	EN55032 / EN55035	EN55032 / EN55035	EN55032 / EN55035
Safety (designed to meet)	EN62368-1	EN62368-1	EN62368-1
Radio and Telecommunication (designed to meet)	RED	RED	RED
MTBF @ 25°C ambient according to Telcordia SR-332, Environment GB, excluding battery	~315 000	~415 000	~380 000

(choose one)

[1] Please contact factory for minimum order quantities

[2] Internal connector

[3] Depending on installation situation, interface connection and power mode. Please 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] These LTE and Wi-Fi modules have replaced the previously used Sierra Wireless MC7455 and SparkLAN WPEB-263ACNI(BT) due to these modules going EOL (previous products: RPC/RMLA3K21-B102E)

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

syslogic
industrial computing