AI Rugged Computer

COMPACT AI Rugged Series

Intelligent Machine Learning Unit with NVIDIA Jetson TX2(i)

RPC/COMPACT A2 Series

This fanless RPC COMPACT-A2 generation is based on the NVIDIA Jetson TX2(i) processor module and offers a wide range of interface options.
The robust and uncompromising industrial design allows the implementation in the most demanding environments for AI applications and guarantees long term availability.

- **IP67 Protection**
- **Shock and vibration resistant**
- **Dust and water proof**
- **Extended AI Computing**
- **24/7 continuous operation**

NVIDIA Linux for Tegra (L4T)

Product Highlights

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

Product Features

256-core NVIDIA Pascal™ GPU
Dual-Core NVIDIA Denver 2 64-Bit CPU
Quad-Core ARM® Cortex®-A57 MPCore
8GB 128-bit LPDDR4 RAM soldered on board
Socket for CFast
Ethernet, USB, CAN
Field M12 connectors
Rugged aluminum housing
Protection class IP67

Markets / Applications

Construction Vehicles
Transportation
Agriculture
Automated Guided Vehicles (AGV)

CE

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Order Code		RPC/RSA2I20-A104S[1]	RPC/RSA2I20-C104S[1]
Processor module / Performance			
NVIDIA Jetson TX2 | 256-core NVIDIA Pascal™ GPU		•	•
NVIDIA Jetson TX2i | 256-core NVIDIA Pascal™ GPU		optional	optional
NVIDIA Jetson TX2 4GB | 256-core NVIDIA Pascal™ GPU		on request	on request
Dual-Core NVIDIA Denver 2 64-Bit CPU and Quad-Core ARM® Cortex®-A57 MPCore		•	•
AI Performance		1.3 TOPs	1.3 TOPs
Memory / Storage			
Data Cache Size		2MB	2MB
4ch x 32-bit LPDDR4 RAM soldered on board		8GB	8GB
eMMC 5.1 Flash Storage on board		32GB	32GB
microSD Card socket[2]		1	1
CFast socket with retention frame[2]		1	1
Features			
Real time clock PC compatible with battery backup Renata CR2477N (950 mAh)		•	•
Real time clock PC compatible with Goldcap backup		optional	optional
Hardware Watchdog & Temperature supervisor		•	•
Intelligent power management		•	•
Inertial measurement unit (IMU) STMicroelectronics ISM330DLCTR		•	•
Communication Interfaces			
Graphic interface behind the cover		DisplayPort 1.2	DisplayPort 1.2
Internal USB version 2.0 OTG behind the cover	(micro USB Type AB)	1	1
USB version 2.0 behind the cover	(Type A)	2	2
USB version 2.0	(1x M12 female a-coded)	2	–
Ethernet 10/100/1000Mbit (1x native, 1x I210-IT)	(M12 female x-coded)	2	2
Active/passive-CAN ESD protected, isolated	(M12 female a-coded)	2 (2x M12 5P)	2 (1 x M12 8P)
Mini PCIe socket[2]		1	1
I2C bus[2]		•	•
Buzzer		•	•
MIPI CSI-2 Camera Interface[2]		•	•
USB version 3.0[1]		on request	on request
Optional Wireless Connectivity			
Cellular 4G Module with GNSS receiver (LTE/UMTS/GSM) Sierra Wireless MC7455 - M2M only!, uses miniPCIe socket[2]		3 x SMA	3 x SMA
Dual SIM Support (nanoSIM to mPCIe slot[2])		•	•
Wireless LAN IEEE 802.11a/b/g/n/ac dual-band 2x2 MIMO & Bluetooth 4.1		2 x RP-SMA	2 x RP-SMA
Technical Data			
Dimensions [mm] (housing, incl. mounting)		w245 x h75 x d165	w245 x h75 x d165
Net weight [gram]		~3000	~3000
Non isolated Input voltage, with Ignition controller, reverse polarity protected (M12 4P male a-coded)		9 ... 45VDC	9 ... 45VDC
16.8...45VDC Input voltage, isolated with Ignition controller, reverse polarity protected[1]		optional	optional
Current consumption typ. in mA @ 24V without Add-Ins, idle		~400	~400
Power consumption typ. in Watt @ 24V without Add-Ins, idle		~10	~10
Environmental Conditions			
Operating temperature[3]		–25°C ... +65°C	–25°C ... +65°C
Storage temperature		–25°C ... +80°C	–25°C ... +80°C
Extended operating temperature –40°C ... +70°C		with TX2i	with TX2i
Extended storage temperature –40°C ... +85°C		with TX2i	with TX2i
Ingress protection standard according to EN60529		IP67	IP67
Conformal coating[4]		on request	on request
UN/ECE R10 (E-mark) certification		on request	on request
Shock		EN60068-2-27 / EN61373	EN60068-2-27 / EN61373
Vibration		EN60068-2-64 / EN61373	EN60068-2-64 / EN61373
EMI-Conformity		EN-50121-3-2	EN-50121-3-2
Designed to meet safety according to		EN62368-1	EN62368-1
Radio and Telecommunication		Designed to meet RED	Designed to meet RED
MTBF @ 25°C ambient according to Telcordia SR-332, Environment GB, excluding battery		~490 000h	~490 000h

[1] Please contact factory for minimum order quantities
[2] Internal connector
[3] Depending on installation situation and interface connection. Please see user documentation.
[4] On all possible components (excl. TX2(i) Module, connectors and wireless devices)

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
Täfernstrasse 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 **Switzerland (Headquarters)**
+49 7741 9671-420 **Germany and Austria**

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industrial computing