

AI Vehicle Computer

COMPACT AI Vehicle Series

Intelligent Machine Learning Unit with NVIDIA Jetson TX2 NX

first draft
preliminary

optional
LTE / GPS / Wi-Fi



2x USB 2.0
microSD
DisplayPort

Image similar

Power Supply
9 ... 45VDC

CAN

2x GBit LAN

USB 3.1

HDMI

IPC/COMPACT A2N - RS

This fanless COMPACT A2N generation is based on the NVIDIA Jetson TX2 NX processor module and offers a wide range of interface options.

The robust and uncompromising industrial design allows the implementation in the most demanding mobile AI applications and guarantees long term availability.

- 24/7 continuous operation
- Extended AI Computing
- Passively cooled, no moving parts
- Long term availability with fixed BOM

 **NVIDIA.** Linux for Tegra (L4T)

Product Highlights

Maintenance free
Power Ignition Controller
Shock and vibration resistant
LTE, GNSS and Wi-Fi connectivity options
No moving parts / passively cooled

Product Features

256-core NVIDIA Pascal™ GPU Dual-Core
NVIDIA Denver 2 64-Bit CPU Quad-Core
ARM® Cortex®-A57 MPCore
4GB 128-bit LPDDR4x RAM soldered on board
M.2 slot for storage expansion
Ethernet, USB, Passive or Active CAN
LTE, GNSS & WiFi options
Aluminum & Stainless steel housing
Protection class IP65

Industries / Applications

Automated Guided Vehicles (AGV)
Automotive
Transportation
Robotics
Agriculture
Construction Vehicles

Processor module / Performance

NVIDIA Jetson TX2 NX 256-core NVIDIA Pascal™ GPU	•	•
6-Core ARM CPU (Dual-Core NVIDIA Denver 2 64-Bit CPU and Quad-Core ARM® Cortex®-A57 MPCore)	•	•
AI Performance	1.33 TFLOPs	1.33 TFLOPs

Memory / Storage

Data Cache Size	2MB	2MB
128-bit LPDDR4 RAM soldered on board	4GB	4GB
eMMC 5.1 Flash Storage on board	16GB	16GB
M.2 2280 slot for SSD storage up to 2TB ²	1	1
microSD card socket ²	1	1

Features

Inertial measurement unit (IMU) STMicroelectronics ISM330DHCXTR	•	•
Real time clock (RTC) with battery backup Renata CR2477N (950mAh)	•	•
Hardware Watchdog & Temperature supervisor	•	•

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
USB version 2.0 ¹	(Type A)	optional	optional
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)	1	1
Serial RS232 ²		2	2
Mini PCIe socket ²		2	2
I2C bus ²		1	1
Buzzer		1	1
MIPI CSI-2 / GMSL2 / FPDLinkIII Camera interface ¹		on request	on request

Wireless Connectivity

Cellular Module (LTE/UMTS/GSM) with GNSS positioning functionality Sierra Wireless MC7455 - M2M only! (Dual nano SIM)	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 ¹ u-blox ZED-F9P module	optional	optional

Technical Data

Dimensions [mm] (housing, excl. mounting)		w182 x h55 x d127	w182 x h55 x d127
Dimensions [mm] (housing, incl. mounting)		w218 x h55 x d127	w218 x h55 x d127
Net weight [gram]		~ 1400	~ 1500
Non isolated input voltage, with ignition controller, reverse polarity protected	(M12 male, a-coded)	9... 45VDC	9... 45VDC
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 ... +70°C	-25°C ... +70°C
Storage temperature		-25°C ... +85°C	-25°C ... +85°C
Ingress protection standard according to EN60529		IP65	IP65
Conformal coating ⁴		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
MTBF @ 25°C ambient <small>excluding battery</small>		tbd	tbd

¹ Please contact factory for minimum order quantities² Internal connector³ Depending on installation situation and interface connection. Please see user documentation⁴ On all possible components (excl. TX2 NX 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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Syslogik Datentechnik AG
Täferstrasse 28
CH-5405 Baden Dättwil

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

+41 56 200 90 40
+49 7741 9671-420

Switzerland (Headquarters)
Germany and Austria

 **syslogik**
industrial computing