

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

AI Vehicle Computer

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



| | Order Code | IPC/RSA2NH20-tbd1 ¹ | IPC/RSA2NH20-tbd2 ¹ |
|---|-----------------------|--------------------------------|--------------------------------|
| 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-263ACN1(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 quantities

² Internal connector

³ Depending on installation situation and interface connection. Please see user documentation

⁴ On all possible components (excl. TX2 NX module, connectors and wireless devices)

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industrial computing

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