

AI Rugged Computer

## COMPACT AI Rugged Vehicle Series

Computer Vision Edge Unit with NVIDIA Jetson AGX Xavier

LTE / GNSS / Wi-Fi



Dual nanoSIM  
microSD  
HDMI  
USB



Image similar

## RPC/COMPACT RSL A3 (E2)

This fanless RPC COMPACT-A3 is based on the NVIDIA Jetson AGX Xavier 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
- Sealed housing with IP67, IP69 protection
- Shock and vibration resistant



### 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  
Rugged M12 connectors

### Industries

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



| Processor module / Performance   |                              |  |                   |
|--|------------------------------|--|-------------------|
| NVIDIA Jetson AGX Xavier   <b>32GB RAM</b>   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           |
| NVIDIA Jetson AGX Xavier   <b>64GB RAM</b>   512-core NVIDIA Volta™ GPU with 64 Tensor Cores                       |                              | on request                             | on request        |
| NVIDIA Jetson AGX <b>Xavier Industrial</b> 512-Core NVIDIA Volta™ GPU (ECC) with 64 Tensor Cores                   |                              | on request                             | on request        |
| 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) <sup>2</sup>  |                              | 1                                      | 1                 |
| Features   |                              |  |                   |
| Inertial measurement unit (IMU) <small>STMicroelectronics ISM330DHCXTR</small>                                     |                              | •                                      | •                 |
| Real time clock (RTC) with battery backup <small>Renata CR2477 (950 mAh)</small>                                   |                              | •                                      | •                 |
| Communication Interfaces   |                              |  |                   |
| Display output <small>behind the back service cover</small>  | (1x Standard HDMI connector) | HDMI 2.0                               | HDMI 2.0          |
| Internal USB version 2.0 OTG <small>behind the back service cover</small>  | (micro USB Type AB )         | 1                                      | 1                 |
| USB version 2.0 <small>behind the back service cover</small>   | (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 <sup>1</sup>   | (M12 male a-coded)           | 4 in & 2 out                           | 4 in & 2 out      |
| Serial RS232 <small>RX, TX, RTS, CTS, GND</small>  | (M12 male a-coded)           | 1                                      | 1                 |
| USB version 3.1 (5Gbit/s)  | (Type A, IP67)               | 1                                      | 1                 |
| Mini PCIe socket <sup>2</sup>  |                              | 1                                      | 1                 |
| PPS Input <sup>1</sup> , 3.3V (LVCMOS), connected to Xavier GPIO   | (1x SMA)                     | on request                             | on request        |
| Power over Ethernet - IEEE802.3at 10/100/1000Mbit <sup>1</sup> , taller housing: h103mm                            | (M12 female x-coded)         | on request                             | on request        |
| GMSL2 camera inputs <sup>1</sup> , taller housing: h103mm  | (4x/8x FAKRA-Z)              | on request                             | on request        |
| Wireless Connectivity  |                              |  |                   |
| Cellular 4G Module (LTE/UMTS/GSM) with built-in GNSS <sup>6</sup> , Sierra Wireless EM7590 (Dual nano SIM support) |                              | 3x SMA                                 | on request        |
| Wireless LAN (Wi-Fi 5) 802.11a/b/g/n/ac dual-band 2x2 MIMO & Bluetooth 5.1 <small>Intel Wireless-AC 9260</small>   |                              | 2x RP-SMA                              | on request        |
| Cellular 5G module (4G/3G fallback) with GNSS  |                              | on request                             | on request        |
| Wireless LAN (Wi-Fi 6) 802.11ax/ac/a/b/g/n dual-band 2x2 MIMO  |                              | on request                             | on request        |
| High Accuracy (RTK) GNSS positioning module with optional heading support <small>u-blox ZED F9R / F9P</small>      |                              | on request                             | on request        |
| 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 <small>reverse polarity protected</small>                     | (M12 5P male a-coded)        | 9 ... 45VDC                            | 9 ... 45VDC       |
| Power consumption <sup>3</sup>   |                              | depends on power mode (15W, 30W, MAXN) |                   |
| Environmental Conditions   |                              |  |                   |
| Operating temperature <sup>3</sup>   |                              | -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 <sup>4</sup>   |                              | on request                             | on request        |
| Road vehicles, UN/ECE R10 (E-mark) <sup>5</sup>  |                              | on request                             | on request        |
| 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 <small>according to Telcordia SR-332, Environment GB, excluding battery</small>                |                              | ~300 000h                              | ~400 000          |

<sup>1</sup> Please contact factory for minimum order quantities<sup>2</sup> Internal connector<sup>3</sup> Depending on installation situation, power mode and interface connection. See user documentation.<sup>4</sup> On all possible components (excl. NVIDIA Xavier Module, connectors and wireless devices)<sup>5</sup> 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.<sup>6</sup> The first versions of this product, featured the Sierra Wireless EM7455 LTE module (RPC/RS3A3K22-M132S), this has been switched to the EM7590 for mass production, due to the EM7455 being EOL.

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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