

Rugged Computer RML A4NX

Computer Vision Edge Unit with NVIDIA Jetson Orin NX (16GB)



Product Highlights

- 24/7 continuous operation
- IP67 protection, extended temperature range
- Power ignition controller
- High shock and vibration resistance
- GMSL2 camera inputs with PoC



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Order Code RPC/RMLA4NX16-N202S-02^{1,6} RPC/RMLA4NX16-M202S-02^{1,6}

| Processor module / Performance | | |
|--|-------------------------|-------------------------|
| NVIDIA Jetson Orin NX (16GB RAM) 1024-core NVIDIA Ampere GPU with 32 Tensor Cores 8-core NVIDIA Arm® Cortex A78AE 64-bit CPU | ✓ | ✓ |
| NVIDIA Jetson Orin NX (8GB RAM) 1024-core NVIDIA Ampere GPU with 32 Tensor Cores 6-core NVIDIA Arm® Cortex A78AE 64-bit CPU | on request ¹ | on request ¹ |
| AI Performance | 100 TOPs | 100 TOPs |
| Memory / Storage | | |
| 128-Bit LPDDR5 (102,4 GB/s) RAM soldered on board | 16GB | 16GB |
| M.2 2280 Key M socket (for NVMe SSD) ⁶ , an SSD is <u>required</u> , no internal eMMC storage available | 240GB | 240GB |
| microSD Card socket ² | 1 | 1 |
| Features | | |
| Inertial measurement unit (IMU) STMicro ISM330DHCXTR | ✓ | ✓ |
| Real time clock (RTC), with battery backup Renata CR2477 (950 mAh) | ✓ | ✓ |
| Communication Interfaces | | |
| DisplayPort 1.4a @ 8K30 ³ behind the service cover (rear) | 1 | 1 |
| Internal USB version 2.0 ³ behind the service cover (rear), for device flashing and SSH access only (micro USB Type AB) | 1 | 1 |
| USB version 2.0 ³ behind the service cover (rear) (Type A) | 2 | 2 |
| USB version 3.1 (5 Gbit/s) with dustcap (Type A) | 1 | 1 |
| Ethernet 10/100/1000 BASE-T (1x native, 1x I210-IT) (M12 female, x-coded) | 2 | 2 |
| GMSL2 camera inputs, with Power over Coax (PoC) ^{12VDC+/-5%} (FAKRA-Z, IP67) 3W max. power limit per port | 8 | 8 |
| CAN 2.0A / CAN 2.0B (active/passive), CAN FD supported, isolated (M12 female, a-coded) | 1 | 1 |
| CAN 2.0B only (active/passive), CAN FD supported, isolated (M12 female, a-coded) | 1 | 1 |
| Digital I/O's, current sinking, isolated ^{12/24VDC} (M12 male, a-coded) | 4in / 2out ⁵ | 4in / 2out ⁵ |
| Serial RS232 (M12 male, a-coded) | 1 | 1 |
| USB version 2.0 ¹ (M12 female, a-coded) | on request | on request |
| Wireless Connectivity | | |
| Cellular 4G Module (LTE/UMTS/GSM) with GNSS Sierra Wireless EM7590 (Dual nano SIM support) | none | 3 x SMA |
| Wireless LAN (Wi-Fi 6/6E) 802.11ax/ac/a/b/g/n dual-band 2x2 MIMO & Bluetooth 5.2 Intel AX210 | none | 2 x RP-SMA |
| Cellular 5G module (4G/3G fallback) with GNSS | on request | on request |
| High precision multiband GNSS module with optional heading support ¹ u-blox ZED-F9P/F9R | on request | on request |
| Technical Data | | |
| Dimensions excl. mounting holes [mm] | w250 x h100 x d170 | w250 x h100 x d170 |
| Net weight [gram] | ~3600 | ~3650 |
| Non-isolated input voltage with ignition controller and RP protection (M12 male, a-coded) | 9 ... 45VDC | 9 ... 45VDC |
| Typical power consumption under load with few peripherals attached (25W Mode) ³ | 35W | 35W |
| Software / OS | | |
| NVIDIA JetPack SDK – Jetson Linux (Ubuntu based) | ✓ | ✓ |
| Environmental Conditions | | |
| Operating temperature ³ , *Cold startup max. -25°C | -40°C* ... +70°C | -40°C* ... +70°C |
| Storage temperature | -40°C ... +85°C | -40°C ... +85°C |
| Ingress protection standard according to EN60529 | IP67 | IP67 |
| Conformal coating ⁴ | on request | on request |
| Shock according to ISO 15003 (designed to meet) | 50g peak acc. (11ms) | 50g peak acc. (11ms) |
| Vibration according to ISO 15003 (designed to meet) | 2g (10 – 350Hz) | 2g (10 – 350Hz) |
| EMC-Conformity | EN55032 / EN55035 | EN55032 / EN55035 |
| Safety (designed to meet) | EN62368-1 | EN62368-1 |
| Radio and Telecommunication (designed to meet) | n/a | RED |
| estimated MTBF @ 25°C ambient ⁶ according to Telcordia SR-332, Environment GB, excluding battery and SSD | ~tbd | ~tbd |

¹ Please contact factory for minimum order quantities

² Internal connector

³ Depends on installation situation interface connection and device load. Please see user documentation. Cold startup maximal -25°C

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

⁵ The six total digital I/Os are each configurable as either output or input via software.

⁶ The product must be ordered with an SSD, use the following order codes: RPC/RMLA4NX16-x202S-02(240GB), -05(480GB), -10(960GB), -20(1920GB)

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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