Railway Computer **RML A4NX**

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

preliminary

Railway Series

Similar image, IPC/RMLA4NX16-B201S-01

Product Highlights
24/7 continuous operation
Railway certified, EN50155 & EN45545 HL3
Long term availability with fixed BOM
Passive cooling, no moving parts
Power Over Ethernet (PoE+)

ACCESSORIES

CE UK CA

Railway Computer RML A4NX

Order Code	IPC/RMLA4NX16-A201S-02[1,6]	IPC/RMLA4NX16-B201S-01[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 required, no internal eMMC storage available]	240GB	120GB
microSD Card socket [2]	1	1
Features		
Inertial measurement unit (IMU) STMicro ISM330DHCXTR	✓	✓
Real time clock (RTC), with goldcap backup (charge holds typ. 36h)	✓	✓
Communication Interfaces		
DisplayPort 1.4a @ 8K30 behind the service cover (rear)	1	1
Internal USB version 2.0 behind the service cover (rear), for device flashing and SSH access only (micro USB Type AB)	1	1
USB version 2.0 behind the service cover (rear) (Type A)	2	2
USB version 3.1 (5 Gbit/s) (Type A)	1	1
Ethernet 10/100/1000 BASE-T (1× native, 1× I210-IT) (M12 female, x-coded)	2	2
Power over Ethernet - IEEE802.3at 10/100/1000Mbit (M12 female x-coded) PSE - Power sourcing equipment, producing 48VDC out	4 (total max. power: 39W)	4 (total max. power: 39W)
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
Mini PCIe socket [2]	1	1
Digital I/O's, current sinking, isolated 12/24VDC (M12 male, a-coded)	4in / 2out	none
Serial RS232 (M12 male, a-coded)	1	none
Wireless Connectivity		
Cellular 4G Module (LTE/UMTS/GSM) with GNSS Sierra Wireless EM7590 (Dual nano SIM support)	3 × SMA	none
Wireless LAN (Wi-Fi 6) 802.11ax/ac/a/b/g/n dual-band 2x2 MIMO & Bluetooth 5.2 Intel AX210	2 × RP-SMA	none
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 incl. mounting holes [mm]	w314 × h94 × d170	~w330 × h94× d170
Net weight [gram]	~2750	~2700
Isolated wide input voltage with RP protection (M12 male, a-coded)	16.8 … 137.5 VDC	16.8 … 137.5 VDC
Interruption of voltage supply time: EN50155 Class S2	>10ms	>10ms
Power consumption typ. under load [3]	~25W	~25W
Software / OS		
NVIDIA JetPack SDK – Jetson Linux (Ubuntu 20.04 based)	✓	✓
Environmental Conditions		
Operating temperature [3]	−25ºC … +65ºC	−25ºC … +65ºC
Storage temperature	−25ºC … +85ºC	−25ºC … +85ºC
Ingress protection standard (IP-rating)	IP20	IP20
Conformal coating [4]	PCX	PCX
Shock	EN 61373	EN 61373
Vibration	EN 61373	EN 61373
EMC-Conformity	EN 50121-3-2 (IEC62236-3-2)	EN 50121-3-2 (IEC62236-3-2)
Fire protection (designed to meet)	EN 45545-2 HL3	EN 45545-2 HL3
Safety (designed to meet)	EN62368-1	EN62368-1
Radio and Telecommunication (designed to meet)	RED	n/a
estimated MTBF @ 25ºC ambient according to Telcordia SR-332, Environment GB, excluding SSD	~275 000h	~350 000h

[1] Please contact factory for minimum order quantities
[2] Internal connector
[3] Depending on installation situation and interface connection (e.g. PoE). Cold start at −25ºC, during operation −40ºC is possible. Please see user documentation.
[4] On all possible components (excl. Orin 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: IPC/RMLA4NX16-x201S-**02**(240GB), **-05**(480GB), **-10**(960GB), **-20**(1920GB)

For support and further information support@syslogic.ai or www.syslogic.ai

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.

v0.3 | June 2023