RQX-31G

Embedded ROS 2 Robotic Controller Powered by NVIDIA® Jetson Orin™ NX Module

Features

- Embedded with NVIDIA® Jetson Orin NX/Nano™ module, delivering up to 100 TOPS
- Time synchronization for GMSL2 cameras
- 9V to 36V wide-range DC input with built-in ignition power control
- Ideal for diverse AI applications for aftermarket autonomous vehicles, service robots, humanoid robot, AMR and more

Preliminary



Ordering Information

PN	Model Name	NVIDIA Module	NVIDIA Module Memory	NVMe
93-45109-000E	RQX-31G	Orin NX	16 GB	128 GB

Camera

Vendor	Model Name
Leopard	AR0233
Orbbec	Gemini 335lg | Gemini 345lg
oToBrite	oToCAM223
Sensing	SG3S-ISX031C-GMSL2F | SG3S11AFxk
StereoLab	ZED-X
TIER IV	C1

* Customers can directly purchase cameras from the original vendors, while ADLINK assists in selecting and validating the most suitable sensors for specific use cases.

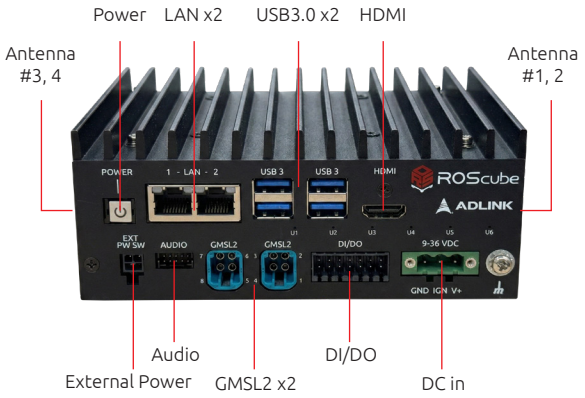
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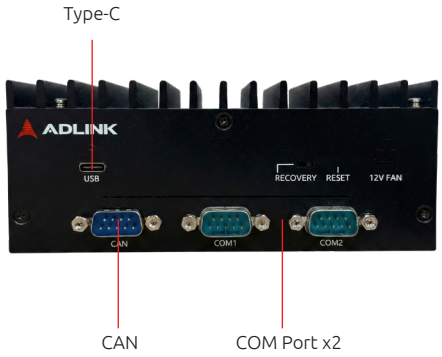
Optional Accessories

PN	Description
31-621A0-0010-A0	Power Adapter - RQX-31G
30-22361-0000-A0	Power cable - RQX-31G
29-E8852-A000	Wi-fi 6/BT module
30-60122-1000-A0	Wi-fi cable
30-60125-1000-B0	Wi-fi Antenna
29-D9902-E020	5G/LTE module
30-60122-1000-A0	5G Cable
30-60192-000-A0	5G Antenna

PN	Description
30-60185-0010-A0	1 meter 1:4 FAKRA cable
30-60185-1010-A0	3 meter 1:4 FAKRA cable
30-60185-3000-A0	6 meter 1:4 FAKRA cable
30-60185-2000-A0	12 meter 1:4 FAKRA cable
30-60218-0000-A0	1 meter FAKRA Plug to FAKRA Jack cable
30-60218-1000-A0	3 meter FAKRA Plug to FAKRA Jack cable
30-60218-2000-A0	6 meter FAKRA Plug to FAKRA Jack cable
30-60218-3000-A0	9 meter FAKRA Plug to FAKRA Jack cable
30-60218-4000-A0	12 meter FAKRA Plug to FAKRA Jack cable

Product Illustration





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Specifications

Model	Orin NX 16GB	Orin NX 8G	Orin Nano 8G
AI Performance	100 TOPS	70 TOPS	40 TOPS
System			
GPU	1024-core NVIDIA Ampere GPU with 32 Tensor Cores		
CPU	8-core Arm® Cortex®-A78AE v8.2 64-bit CPU 2MB L2 + 4MB L3	6-core Arm® Cortex®-A78AE v8.2 64-bit CPU 1.5MB L2 + 4MB L3	6-core Arm® Cortex®-A78AE v8.2 64-bit CPU 1.5MB L2 + 4MB L3
RAM	16GB 128-bit LPDDR5 DRAM	8GB	8GB
Storage	NVMe 128GB		
OS	Linux® Ubuntu		
Front I/O Interfaces			
Button	1x power		
HDMI	1x lockable		
USB	4x USB 3.2 Gen 2 Type-A		
Ethernet	2x 10/100/1000Mbps Ethernet		
DIN/DOUT	4 DI/4DO +(1 x IEEE_1588_PPS input (I^2C1)) (with isolation)		
Camera Interface	2 x 1-to-4 mini FAKRA for GMSL2 camera		
Audio in/out	1 x audio in/out		
External power button	1 x external power button cord connector		
Back I/O Interfaces			
Button	1 x reset, 1 x recovery		
USB	1x USB Type C for OTG		
COM	2x 232/422/485 on main board without isolation		
CAN Bus	1x CANbus port without isolation		
FAN	1x 2.0b		
Extension Slots			
Mini PCIe	1x PCIe mini card slot (WiFi/BT PCIE/USB3.0 co-layout)		
M.2	M.2 M key (2280) for OS M.2 M key (2242) for Data Storage		
Power Supply			
DC Input	9-36V with ignition power control (V+/ IGN/ GND)		
AC Input	84W ,OP Temp Max: 55°C		
Mechanical			
Dimensions (W x D x H)	148mm x 107mm x 60.2mm		
Weight	TBD		
Mounting	VESA		
SMA Antenna Connector	4		
Environmental			
Operating Temperature	-20°C to 70°C with 0.6m/s airflow, at 10W -20°C to 60°C with 0.6m/s airflow, at 15W -20°C to 50°C with 0.6m/s airflow, at 25W -20°C to 40°C with 0.6m/s airflow, at MAXN, Need to use industrial grade parts (which Tamb spec is 85°C) for mPCIE interferface parts.		
Operating Humidity	~95% @40°C (non-condensing, optional with fanless solution) without adapter		
Storage Temperature	-20°C to 85°C		
Vibration	Operating 1Grms, 5-500Hz		
Shock	Operating 20G, half sine 11ms duration		
ESD	Contact ± 4kV, Air ± 8kV		
Regularity	CE & FCC class B, (EN61000-6-4/-6-2), CE-LVD & UL by CB, FCCID		
F/W Support			
WDT	WDT supported		

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