

RQX-59 Series

Embedded Robotic Controller Powered by NVIDIA® Jetson AGX Orin™ Module

Features

- Powerful AI computing for intelligent robotics development
- Excellent performance per watt with the power consumption of AGX Orin module as low as 40W
- Ruggedized, secure connectivity with locking USB ports
- Comprehensive I/O for connecting a wide range of devices
- Time synchronization for GMSL2 camera



Ordering Information

PN	Model Name	GPU/Memory	SerDes
93-45R03-1110	RQX-59G 32GB	Orin AGX 32GB	GMSL2
93-45R03-411E	RQX-59G-E 32GB	Orin AGX 32GB	GMSL2
93-45R03-1210	RQX-59G 64GB	Orin AGX 64GB	GMSL2
93-45R03-420E	RQX-59G-E 64GB	Orin AGX 64GB	GMSL2
93-45R03-002E	RQX-590 32GB	Orin AGX 32GB	N/A
93-45R03-501E	RQX-590-E 32GB	Orin AGX 32GB	N/A
93-45R03-010E	RQX-590 64GB	Orin AGX 64GB	N/A
93-45R03-510E	RQX-590-E 64GB	Orin AGX 64GB	N/A

GMSL2 Camera Support List

Vendor	Model Name
TIER IV	Automotive HDR camera C1
TIER IV	Automotive HDR camera C2
StereoLab	ZED X Stereo
StereoLab	ZED X Mini Stereo
oToBrite	oToCAM223
oToBrite	oToCAM264ISP
Leopard	LI-AR0233-GMSL2 (non ISP)
Leopard	IMX490_GW5400
Orbbec	Gemini 335Lg



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

Embedded OS

PN	Description
SW-45R03-B5D14	Jetpack 5.1.2 for 32GB Orin AGX (Ubuntu 20.04 L4T)
SW-45R03-B5D15	Jetpack 5.1.2 for 64GB Orin AGX (Ubuntu 20.04 L4T)
TBD	Jetpack 6.1 for 32GB Orin AGX (Ubuntu 22.04 L4T)
TBD	Jetpack 6.1 for 64GB Orin AGX (Ubuntu 22.04 L4T)

Optional Accessories

PN	Description
29-E8852-A000	Wi-Fi 6/BT M.2 Type 2230 Combo Module
29-D3096-K030	5G/LTE Module
31-62120-0020	160W AC/DC Power Adapter

Specifications

Model Name	RQX-59G(-E)	RQX-590(-E)
System		
Processor	SKU1: NVIDIA® Jetson AGX Orin™32GB / SKU2: NVIDIA® Jetson AGX Orin™ 64GB	
CPU	SKU1: 8-core Arm® Cortex®-A78AE v8.2 64-bit CPU / SKU2: 12-core Arm® Cortex®-A78AE v8.2 64-bit CPU	
GPU	SKU1: 1792 NVIDIA CUDA® cores and 56 tensor cores / SKU2: 2048 NVIDIA Ampere with 64 tensor cores	
Memory	SKU1: 32GB 256-bit LPDDR5 / SKU2: 64GB 256-bit LPDDR5	
Emmc	SKU1: 64GB on module / SKU2: 64GB eMMC 5.1	
Display	HDMI 2.0	
External I/O Interfaces		
Ethernet	2x GbE	
USB 3.0	4x USB Type A 2x USB Type A (lockable)	
Serial Ports	COM1: RS-232/485; COM2: RS-232	
OTG	1x OTG port for changing environment image	
DB-50 connector	UART, I²C, PWM, SPI, CANbus non-isolation x1, CANbus isolation x1, GPIO	
Audio IN/OUT	1x audio input/output	
Internal I/O Interfaces		
M.2	1x Socket 2, Key M 2280 for Storage (Need NVMe SSD) 1x Socket 1, Key E 2230 for Wifi 1x Key B 3042/3052 socket for 5G LTE module	
Mini PCIe	-	
USIM	1x USIM socket	
RTC	3V 550mAh	
Expansion Box (E models only)		
	1x PCIe Gen4 x16 slot 1x PCIe Gen3 x4 slot	
External Storage		
	1x MicroSD card slot	
Power Supply		
DC Power Input	9-36V (±5% tolerance, reverse polarity protection)	
AC/DC Power Adapter	160W/220W AC/DC	
Power Switch	1x Power button	
Recovery and Reset	1x Recovery, 1x Hardware Reset button	
Mechanical		
Dimensions (WxDxH)	Without expansion box: 190 x 210 x 80 mm With expansion box: 322 x 210 x 80 mm	
Mounting	Wall mount kit	
Environmental		
Operating Temperature	-20°C to 65°C with 0.6m/s airflow at 30W (without wifi module and without 5G module)	
Operating Humidity	Approx. 95% @40°C (non-condensing)	
Storage Temperature	-40 to 85°C	
Vibration	IEC 60068-2-64: Random wave, Operating 1Grms, 5-500 Hz, 3 axes, 60 min/axis duration	
Shock	IEC 60068-2-27. Operating: 20G, 11 ms duration, 3 axes, 3 times per axis	
EMI	CE & FCC class A (EN61000-6-4/-6-2)	
EMS	IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11	
Safety	LVD	