

REX-52N

NVIDIA® Jetson AGX Orin™ Industrial Ultra-Rugged Edge AI Platform for Heavy-Duty Machinery & Harsh Environment

Preliminary



Features

- Powered by NVIDIA® Jetson AGX Orin™ Industrial: 12-core Arm® Cortex®-A78AE with 248 TOPS
- ISO 13766-1, ISO 7637-2, SAE J1455 & J1113 compliant
- Ultra-rugged IP67 design with 5M3 & 6.8 Grms vibration resistance and a wide operating temperature range of -40°C to 75°C with no throttling
- Supports up to 8 GMSL2 for real-time object detection and autonomous navigation
- Supports 6 CAN FD with SocketCAN and J1939 for seamless in-vehicle communication
- Scalable modular I/O design supports up to 8x GMSL/ PoE, custom I/O, and optional RF & Automotive Ethernet modules

Introduction

REX-52N is an ultra-rugged edge AI platform powered by NVIDIA® Jetson AGX Orin™ Industrial, delivering up to 248 TOPS at 75W without throttling. It is purpose-built for heavy-duty vehicles and industrial systems requiring real-time AI inference, multi-sensor fusion, and autonomous decision processing under extreme conditions.

With IP67 protection and automotive-grade power compliance, REX-52N ensures reliable deployment in harsh environments. Its modular connector board enables rapid AI sensor integration and scalable I/O—supporting up to 8 x GMSL2 or 8 x PoE—without platform redesign.

Specifications

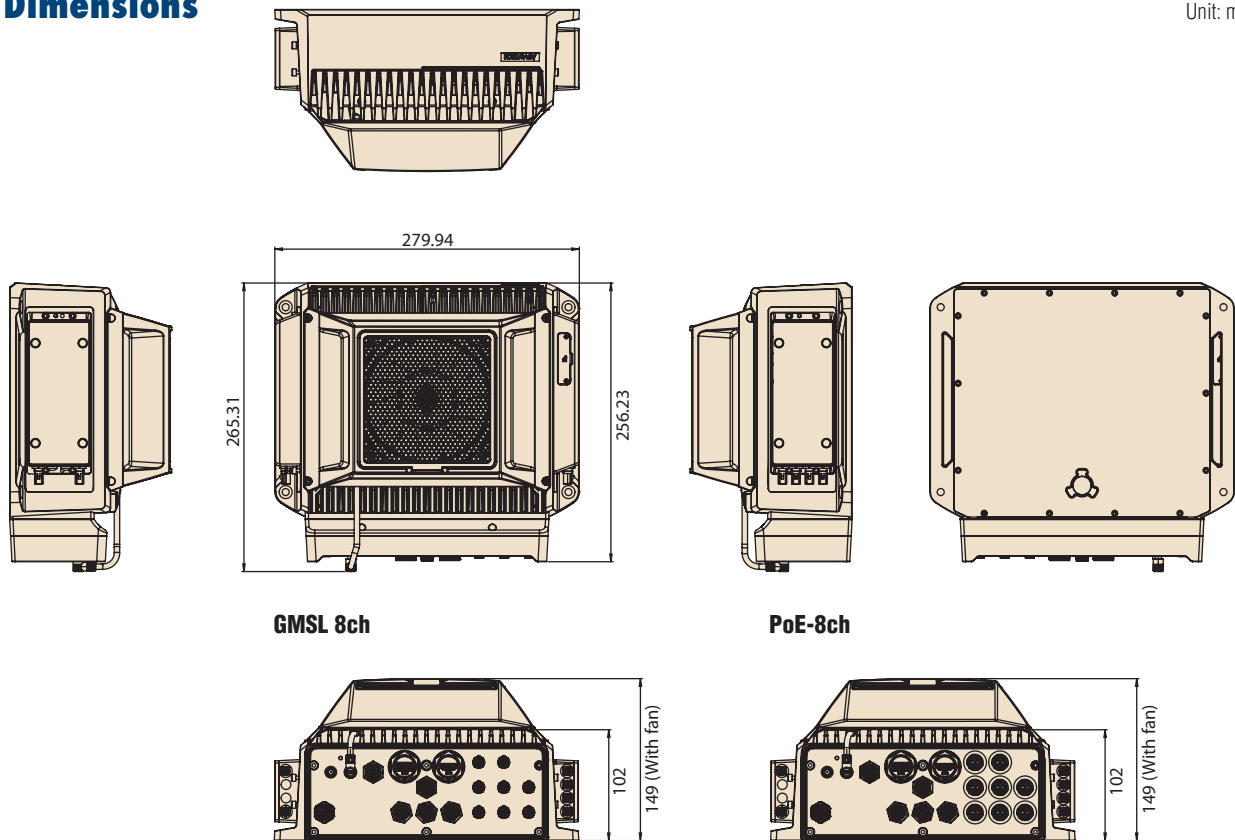
Processor	CPU	NVIDIA® Jetson AGX Orin™ Industrial: 12-core Arm® Cortex®-A78AE NVIDIA® Jetson AGX Orin™ 64GB: 12-core Arm® Cortex®-A78AE NVIDIA® Jetson AGX Orin™ 32GB: 8-core Arm® Cortex®-A78AE
	GPU	AGX Orin™ Industrial: NVIDIA Ampere architecture with 2048 CUDA® cores and 64 Tensor cores, with 248 TOPS AGX Orin™ 64GB: NVIDIA Ampere architecture with 2048 CUDA® cores and 64 Tensor cores, with 275 TOPS AGX Orin™ 32GB: NVIDIA Ampere architecture with 1792 CUDA® cores and 56 tensor cores, with 200 TOPS
	Memory	32GB/64GB 256-bit LPDDR5 RAM (204.8GB/s)
Storage	eMMC	Onboard 64 GB eMMC 5.1
	M.2	1 x M.2 2280 (M-key, NVMe; PCIe x4)
Display	HDMI	Default HDMI(4K) (BOM option TREK SDP2.0)
	GNSS	on board NEO-M9L (ADR support)
I/O	LAN	1 x M12, X-code 2.5GbE; 1 x M12, X-code 10GbE
	GMSL/ PoE	(1) GMSL version: 8 x FAKRA Z GMSL2 (2) PoE version: 8 x M12, D-code 10/100 Mbps PoE, 802.3af/at compliant (Power output shared by all cameras/devices is limited to 60W)
	USB2.0/3.0	1 x USB3.2 Type A, 1 x Internal USB2.0 (Type-C behind the service door for Device flashing)
	CAN	M12, A-code, 17pin, female 6 x CAN FD (Backward CAN bus2.0A/2.0B) with SocketCAN, J1939, OBD-II/ISO-15765 specifications support
	DI/COM	M12, A-code, 17pin, female 2 x 4-wire RS-232/RS-485 (default RS232 + 485) 6 x isolated DI (dry/wet)
	DO/Audio	M12, A-code, 17pin, male 4 x isolated DO 1 x line-out, 1 x mic-in
	WLAN/Bluetooth	1 x M.2 2230 (E Key) for Wi-Fi 7 + Bluetooth
	WWAN	1 x M.2 3042/3052 (B key) for 4G/5G module 1 x externally accessible mini SIM card socket with cover, 1 x embedded SIM (available upon request)
I/O Extension module* (Left)	Antenna	4 x FAKRA connectors for 2 x Wi-Fi + Bluetooth (I/Z-code), 2 x WWAN/LTE (D/L-code) with Wi-Fi/WWAN MIMO support
	Automotive Ethernet	1 x Automotive Ethernet Module board (with 2 x 1000 base T1)
OS	Linux	Ubuntu 22.04 above/ Jetpack 6.1 above
Power	Voltage Input	M12, L-code, 5pin, Male 12/24 V Vehicle power (ISO 7637-2 and SAE J1113 compliant) System power on/off/hibernate management (programmable ignition on/off/delay)
	EMC	CE, RED, FCC, E-mark, ISO 13766-1, EN 62368-1(PoE)
Certification	Safety	UL, cUL, CB
	Vehicle Regulations	E-Mark (E13), ISO 7637-2, ISO 11452-2/4, SAE J1113 & SAE J1455 compliant
Environment	Operating Temperature*	-40~70 °C (with AGX Orin™ Industrial) -25~60 °C (with AGX Orin™ 64GB/32GB)
	IP Rating	IP67
	Vibration	IEC 60068-2-64 (6.8 Grms), EN60721-3-5 (5M3, 10~200Hz, 3Grms), MIL-STD-810H Table 514.8 C-I Category 4 compliant
	Shock	EN60721-3-5 (5M3, 100G, 6ms), MIL-STD-810H, 516.8 Procedure I compliant
Mechanical	Weight	7.5 kg
	Dimension	266 x 280 x 149 mm (w/ FAN Kit on top)

*I/O Extension is an optional module.

*The product has successfully passed QA testing with an operating temperature range of -40°C to 75°C. The 5°C variation in the specifications is intended to ensure more reliable and trustworthy operating conditions.

Dimensions

Unit: mm



GMSL 8ch

PoE-8ch

I/O View

GMSL 8ch



PoE-8ch



Ordering information

Part Number	CPU	Memory	Storage(NVMe)	Vision Interface
REX-52N-BEBHUGSE	AGX Orin™ Industrial	64GB	512GB	GMSL

*System is default with external power cable and GPS antenna.

Optional Accessories

Part Number	Description
1700036955-01	IP67 M12 x-code to RJ45 LAN cable, 2M
1700036849-01	IP67 USB Type A cable, 2M
1700036848-01	IP67 HDMI cable, 2M
1700036629-01	IP67 1x LineOut, 1x MIC, 4x Digital Output, 2M
1700036631-01	IP67 2x RS-232/485, 6x Digital Input, 2M
1700036634-01	IP67 6x CANBus cable, 2M