seeed studio

INDUSTRIAL PRODUCT DATASHEET

reComputer Jetson AGX Orin™ Developer Kit GMSL Bundle

A compact, powerful embodied AI developer kit with the Jetson AGX Orin module, up to 275 TOPS, wide voltage input, rich IO, and GMSL2 camera support for advanced robotics and edge AI applications.

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Overview



The reComputer Jetson AGX Orin™ Developer Kit GMSL Bundle combines the Jetson AGX Orin module, offering up to 275 TOPS, with a 110mm x 110mm footprint suitable for humanoid and robot prototyping. It supports 48V (max 54V) wide voltage input, rich IO including USB, 10G Ethernet, CAN, RS-485, and I2S, and 4x 4-lane CSI output for up to 8x GMSL2 cameras to enable vision AI applications such as BEV, occupancy grid, and SLAM.

Key Features

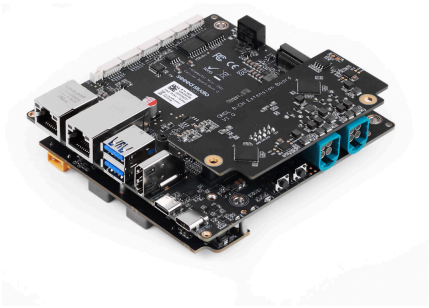
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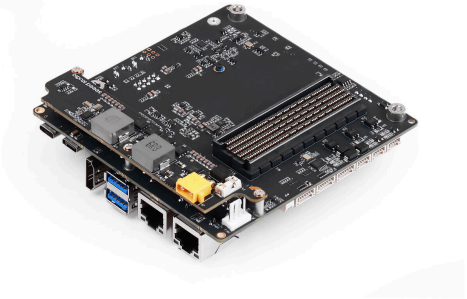
Choosing an AGX Orin Carrier Board or Box? A Developer's Guide to reComputer Mini J501 vs NVIDIA Dev Kit.

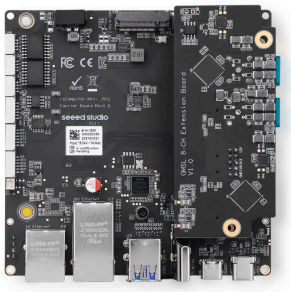
- **Powerful embodied AI Platform** Paired with the Jetson AGX Orin module, offering up to 275 TOPS. Perfect platform for embodied AI and complex edge application development.
- **Ultra Compact Size** 110mm x 110mm footprint, suitable for robot prototyping and development, especially robots that has tight footprint such as humanoids
- **Wide Voltage Input Range** Can be used in 48V battery power system (max 54V input)
- **Rich IO capabilities** Includes most common IOs used in robotics prototyping, such as USB, 10G Ethernet, CAN, RS-485 and I2S
- **Vision AI Support** Features 4x 4-lane CSI output, and can be connected up to 8x GMSL2 cameras, making it ideal for vision AI applications such as BEV, Occupancy Grid, SLAM etc

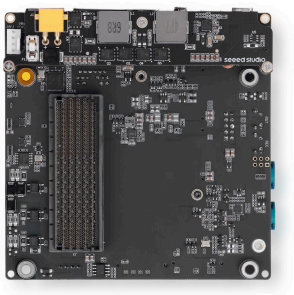
Product Gallery

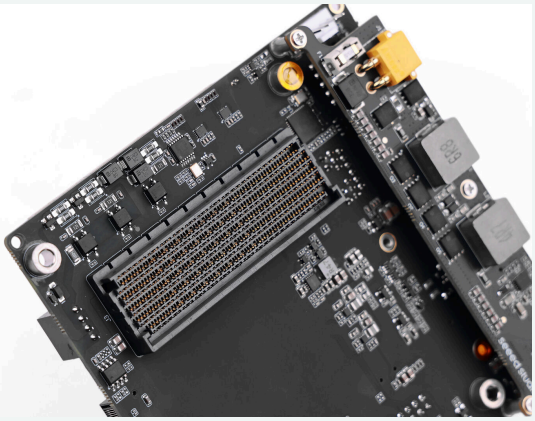


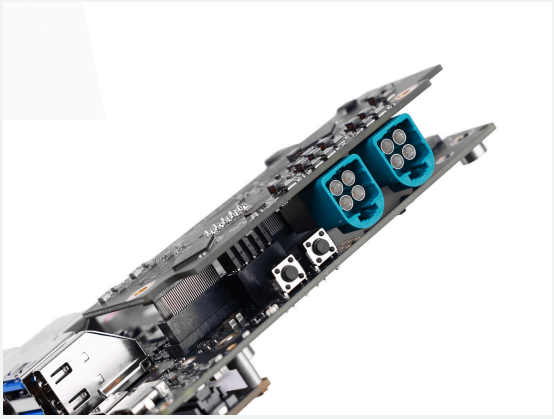




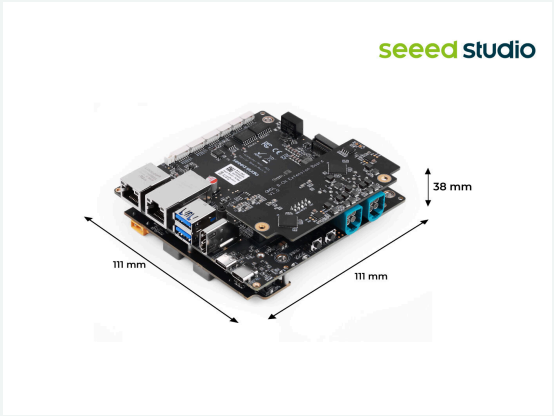












Specification

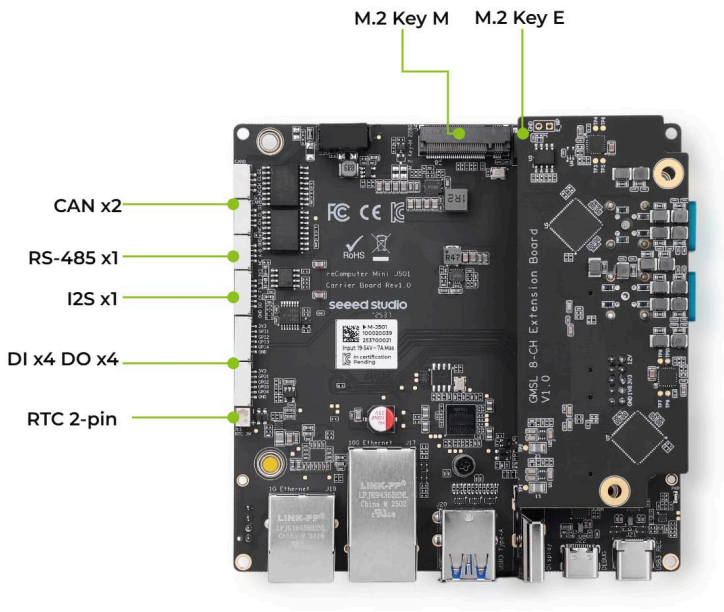
Product	reComputer Mini J501 Carrier Board with GMSL Extension	
Storage	1x M.2 Key M slot	
Networking	1x M.2 Key E slot for WiFi/Bluetooth module	
I/O	USB	2x USB 3.2 Type-A (10Gbps); 1x USB 3.0 Type-C (Recovery); 1x USB 2.0 Type-C (Debug);
	RJ45	1x 1G Ethernet 1x 10G Ethernet
	GMSL	8x GMSL2 (MAX96712 as deserializer)
	CAN	2x CAN （CAN-FD supported)
	RS485	1x RS-485
	I2S	1x I2S
	DI/DO	4x DI 4x DO (DO can be configured as UART)
	Display	1x HDMI 2.1
	Fan	1x 4 pin Fan Connector (12V PWM)
	Button	1x Reset Button; 1x Recovery Button
	RTC	1x RTC 2-pin
Power	1 x XT30 Connector (19-48V DC)	

Mechanical	Dimensions (W x D x H)	110mm x 110mm x 38mm
	Weight	90g
	Installation	Desk, wall-mounting
Operating Temperature	-10℃~60℃ (with thermal grease) -10℃~55℃ (with thermal pad)	
Warranty	2 Year	

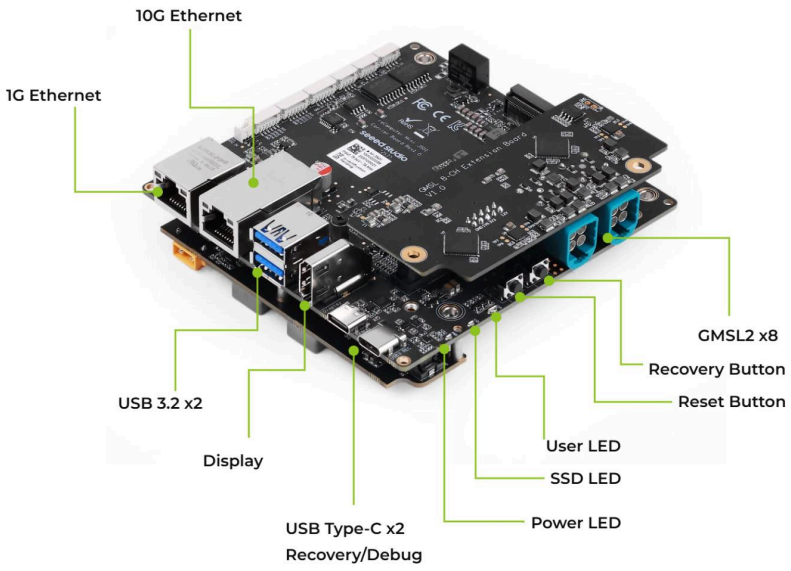
Manufactuer	Model	Resolution
Sensing	SG3S-ISX031C-GMSL2F	1920H*1536V
	SG2-AR0233C-5200-G2A	1920H*1080V
	SG2-IMX390C-5200-G2A	1920H*1080V
	SG8S-AR0820C-5300-G2A	3840H*2160V
Orbbec	Orbbec Gemini 335LG	3D

Hardware Overview

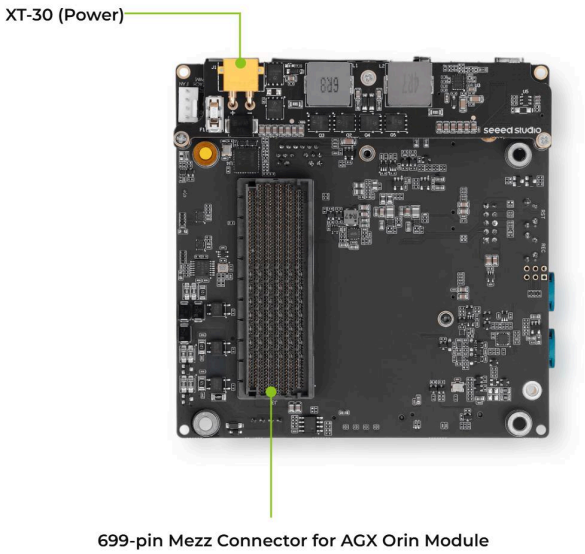
Carrier Board - Bottom View



Carrier Board - Side View



Carrier Board - Top View



Applications

- **Humanoid Robotics**
- **AIRobotDevelopment:** With AGX Orin module, this most powerful embedded AI system lets you create advanced robotics and edge AI applications for manufacturing, logistics, and healthcare. It's the most powerful embedded system, pushing the limits of AI robotics. The Isaac robotics platform offers NVIDIA-accelerated systems, libraries, and generative AI models to enhance AI perception, manipulation, and simulation in robotics. LearnaboutIssacplatform Isaac - AI Robot Development Platform | NVIDIA Developer https://developer.nvidia.com/isaac
- **Multi-Sensor Fusion for Autonomous Mapping & Navigation:** reComputer Mini J501 supports sensor-rich autonomy by integrating data from LiDAR (via Ethernet/CAN), 3D cameras (via USB/CSI), GPS, and IMU (via UART). Using AI models and algorithms like ORB-SLAM, A-LOAM (https://wiki.seeedstudio.com/a_loam/), or Nav2, it performs sensor fusion, real-time localization, path planning, and obstacle avoidance. The low-latency processing on the AGX Orin SoC allows autonomous systems to adapt to changing terrain or obstacles on the fly. Its wide voltage input and compact form factor make it suitable for mobile deployment, enabling robust, edge-level autonomy without external compute. Learn more about sensor options (https://wiki.seeedstudio.com/slamtec/) compatible with reComputer Mini J501 to get started.
- **Capable of Bringing Generative AI to the Edge:** Now you can build AI agents capable of processing large amounts of live or archived videos and images with Vision-Language Models (VLM) such as LLaVA, this new AI agents help nearly every industry summarize, search, and extract actionable insights from video using natural language.
- **Fastest Way to Deploy Generative AI and Computer Vision Models:** We have jetson-example (https://github.com/Seeed-Projects/jetson-examples) prepared for you! It offers one-line deploy projects edge AI applications of generative AI including Ollama, Llama3; computer vision including YOLOv8; and others. We have configured all environment for you to provides single command deployment of projects.

Part List

Seeed Carrier Board (reComputer Mini J501)	x1
Power Board	x1
GMSL Extension Board (GMSL x8)	x1
XT30 to DC power cable	x1
USB Type-C to Type-A cable	x1
GH-1.25 4-pin 100mm JST Cable	x3
GH-1.25 6-pin 100mm JST Cable	x3
M3*16 Stud (For GMSL Extension)	x2
M2.5*4 Screw	x1
M2*6 Screw	x3
M2.5*25 Stud	x4
M2.5*8 Screw	x4

Resource Links

- https://www.seeedstudio.com/reComputer-Jetson-AGX-Orintm-Developer-Kit-GMSL-Bundle.html
- Datasheet
- CarrierBoardSchematic
- PowerBoardSchematic
- 3D File
- Seeed Nvidia Jetson Product Catalog
- Nvidia Jetson Comparison
- Nvidia Jetson Product Comparison
- Seeed Nvidia Jetson Success Cases
- Seeed Jetson One Pager

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