

INDUSTRIAL PRODUCT DATASHEET

reComputer Mini J501 Carrier Board for Jetson AGX Orin™ with GMSL Extension

A compact, high-performance carrier board for Jetson AGX Orin that powers embodied AI robotics with multi-camera GMSL support and rich connectivity.

SKU

100020039

UPDATED

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PRICE

\$359.00(Excl. VAT)



Overview

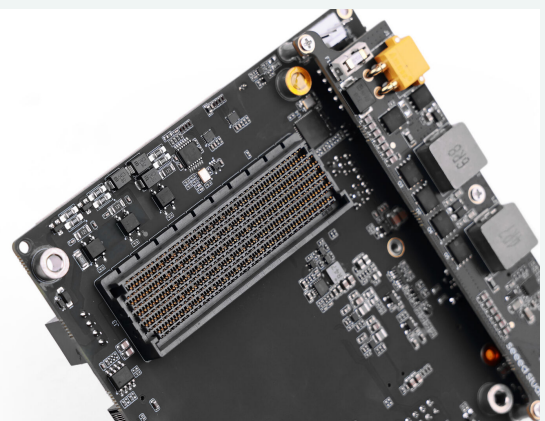
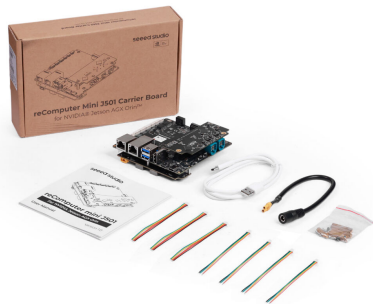
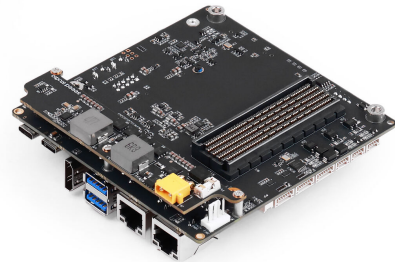
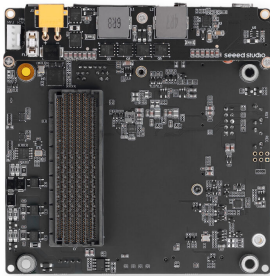
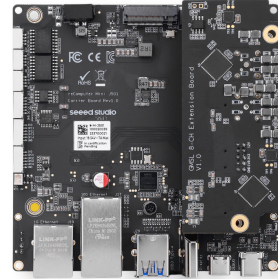
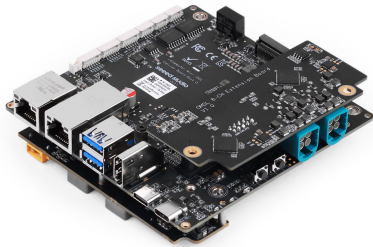


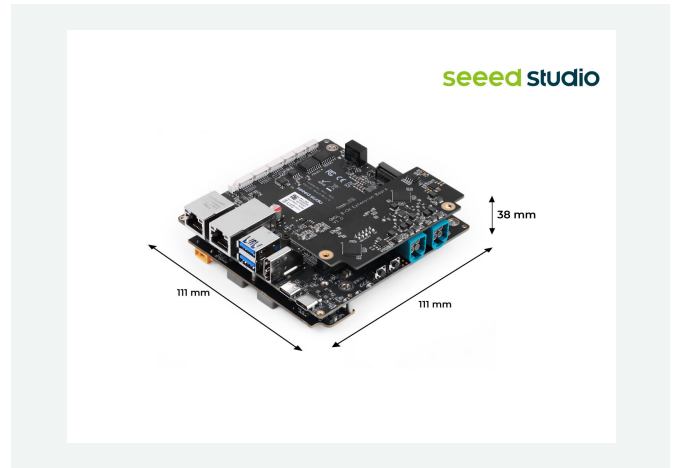
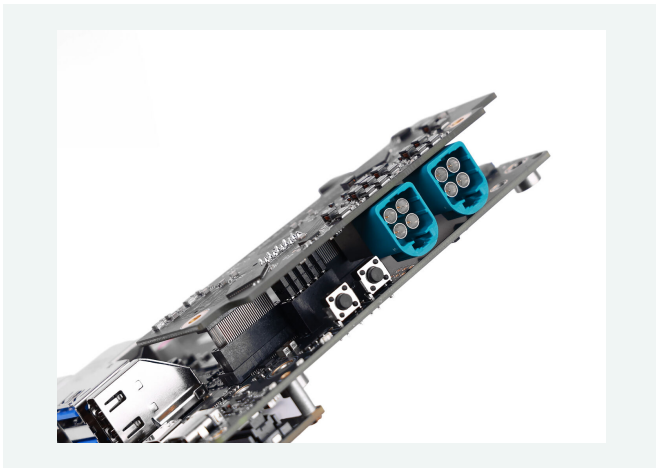
The reComputer Mini J501 is an ultra-compact carrier board for the Jetson AGX Orin module, delivering up to 275 TOPS for powerful embodied AI and robotics development. With rich I/O, wide voltage input, and support for up to 8 GMSL2 cameras, it enables advanced perception, sensor fusion, and edge AI applications like autonomous navigation and generative AI.

Key Features

- **Powerful embodied AI Platform** Compatible with the Jetson AGX Orin module, offering up to 275 TOPS. Perfect platform for embodied AI 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





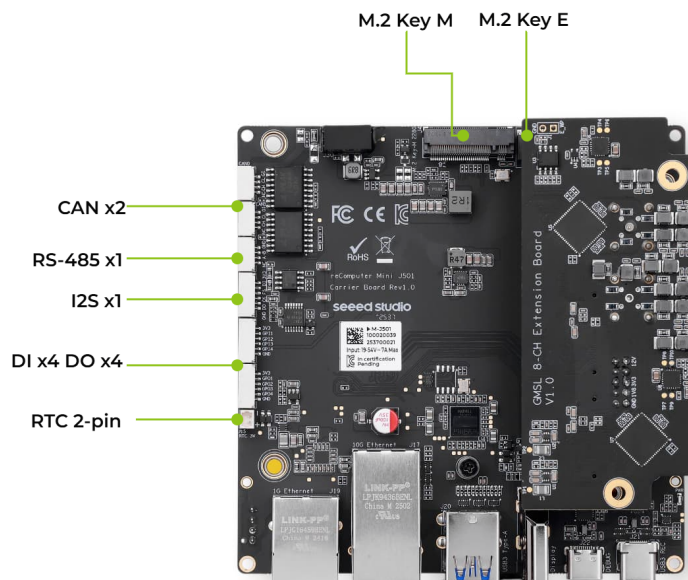
Specification

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, Isolated)
	RS485	1x RS-485
	I2S	1x I2S
	GPIO	4xGPI 4xGPO (GPO 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°C~60°C (with thermal grease) -10°C~55°C (with thermal pad)	
Warranty	2 Year	

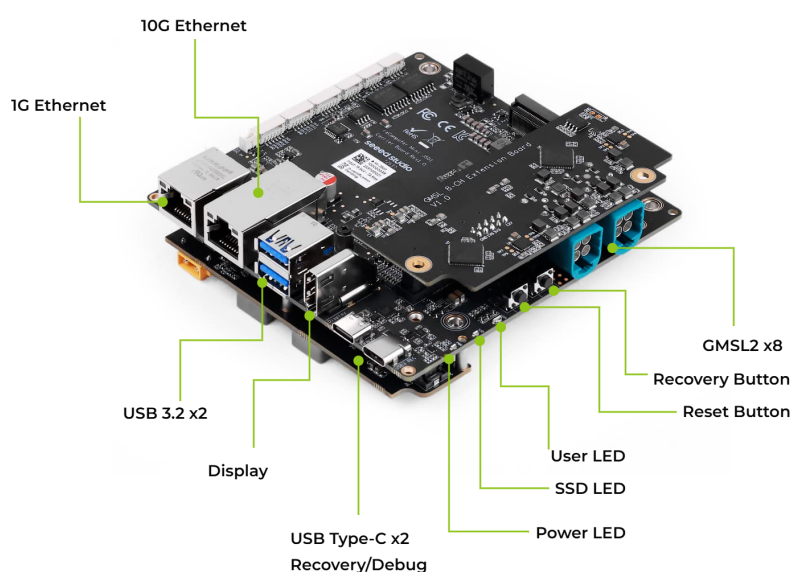
Manufacturer	Model	Resolution
Sensing	SG3S-ISX031C-GMSL2F	1920H*1536V
	SG2-AR0233C-5200-G2A	1920H*1080V
	SG2-IMX390C-5200-G2A	1920H*1080V
	SG8S-AR0820C-5300-G2A	3840H*2160V
Orbbec	Orbbec Gemini 335LG	3D

Hardware Overview

Carrier Board - Bottom View

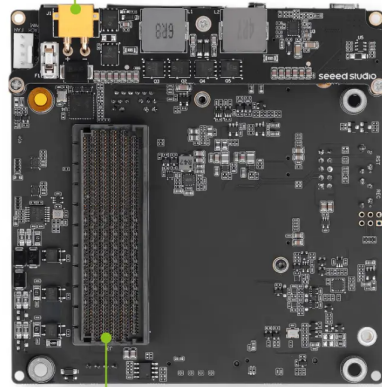


Carrier Board - Side View



Carrier Board - Top View

XT-30 (Power)



699-pin Mezz Connector for AGX Orin Module

Applications

- **Humanoid Robotics**
- **AI Robot Development:** 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.
- **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, 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.
- **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.
- **Deploy Depth Anything v3:** reComputer Mini J501 enables real-time execution of the Depth Anything V3. By processing frames captured from a monocular camera, the system instantaneously generates high-precision depth maps and reconstructs 3D point cloud spaces. This empowers small-scale mobile robots with exceptional spatial perception, obstacle recognition, and real-time 3D modeling capabilities, making it ideal for low-power, high-performance robotic applications such as outdoor inspection, autonomous delivery, and environmental mapping.
- **Fruit Sorting with Mini J501 and StarAI Follower Arm Viola:** Mini J501 (Jetson AGX Orin) and StarAI Follower Arm Viola utilizes the LeRobot framework to execute fruit sorting tasks. The project showcases an end-to-end workflow from data collection to deployment, enabling the robot to intelligently grasp and organize fruits.
- **Fastest Way to Deploy Generative AI and Computer Vision Models:** We have jetson-example 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

Compliance & Logistics



HSCODE	8473309000
USHSCODE	8473309100
UPC	
EUHSCODE	8471707000
COO	CHINA

FCC Requirement

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

15.21

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy.

If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Resource Links

- <https://www.seeedstudio.com/reComputer-Mini-J501-Carrier-Board-for-Jetson-AGX-Orin-p-6606.html>
- [Datasheet](#)
- [Carrier Board Schematic](#)
- [Power Board Schematic](#)
- [3D File](#)
- [Seeed Nvidia Jetson Product Catalog](#)
- [Nvidia Jetson Comparison](#)
- [Nvidia Jetson Product Comparison](#)
- [Seeed Nvidia Jetson Success Cases](#)
- [Seeed Jetson One Pager](#)
- [Flash BSP for Jetson](#)

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