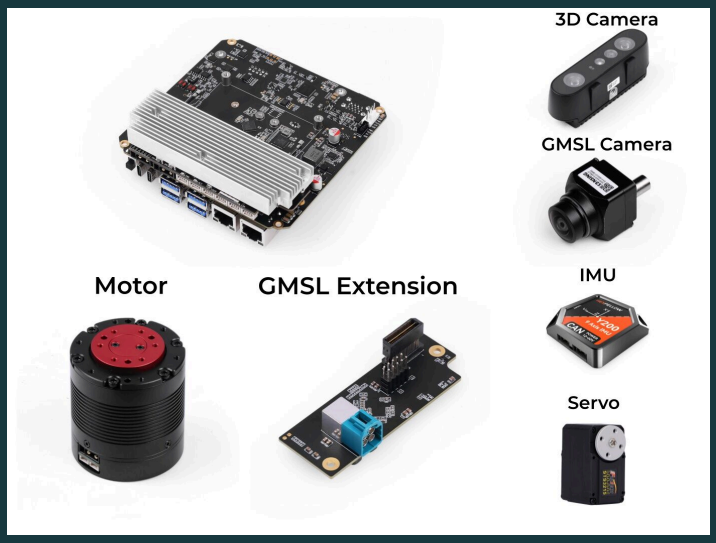
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INDUSTRIAL PRODUCT DATASHEET

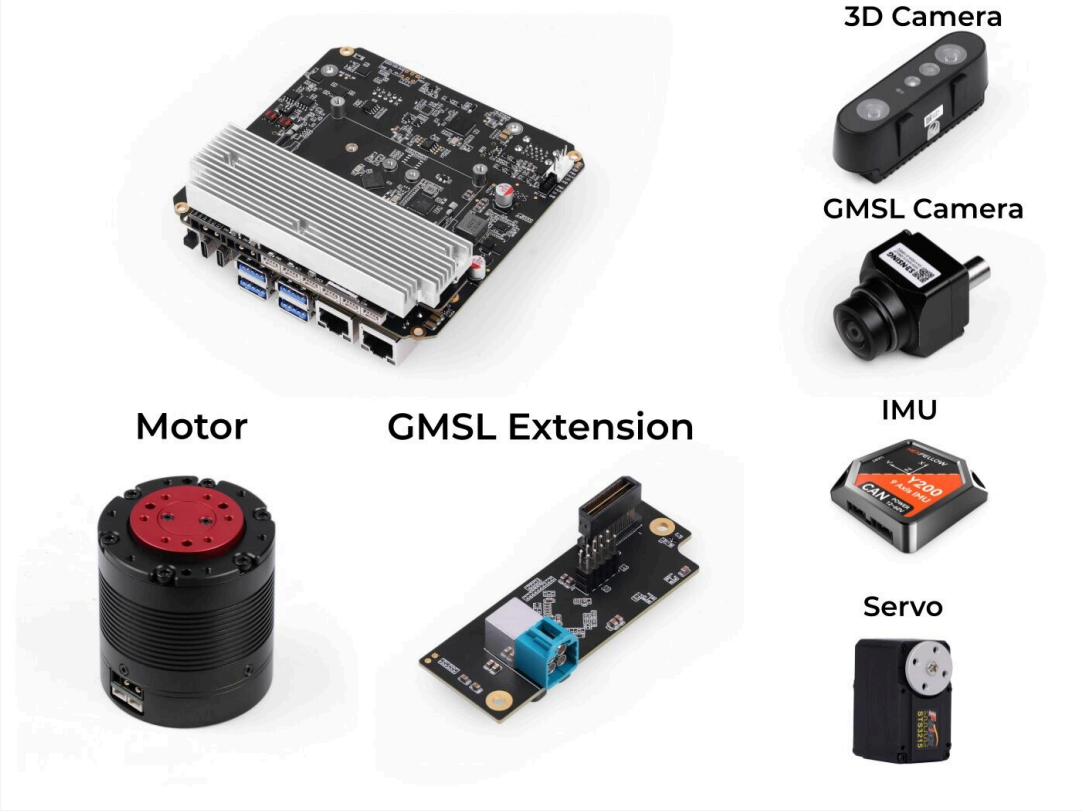
reComputer Robotics & optional accessories

reComputer Robotics: Up to 157 TOPS edge AI computer with rich robotic interfaces and one-line deployment for rapid autonomous robot development.

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Overview



The reComputer Robotics is a compact, high-performance edge AI computer compatible with NVIDIA Jetson Orin Nano/NX modules in Super/MAXN mode, delivering up to 157 TOPS and featuring dual RJ45, CAN, UART, I2C, and GMSL2 interfaces for robotics. It is pre-installed with JetPack 6.2, enabling rapid development of autonomous robots including humanoids, logistics systems, and vision-based applications with one-line AI deployment.

Key Features

- **Robust Hardware Design**: A compact, high-performance edge AI computer compatible with NVIDIA Jetson Orin Nano/NX modules in Super/MAXN mode, providing up to 157 TOPS of AI performance.
- **Multiple Interfaces for robotics**: Including dual RJ45, M.2 slots for 5G/Wi-Fi/BT modules, 6x USB 3.2, 2x CAN, GMSL2(additional purchase), I2C, and UART, functioning as a powerful robotic brain.
- **Software Setup**: Pre-installed with JetPack 6.2 and Linux BSP for seamless deployment.
- **Application and Benefit**: Ideal for rapid development of autonomous robots, accelerating time-to-market with ready-to-use interfaces and optimized AI frameworks.
- **Wide Operating Range**: Operates reliably across a temperature range of -20°C to 60°C at 25W mode and -20°C to 55°C at 40W mode

  Jetson Modules Performance with Super Mode

  - Enhanced power management
  - Improved higher frame rate processing
  - Reduced inference time

Product Gallery



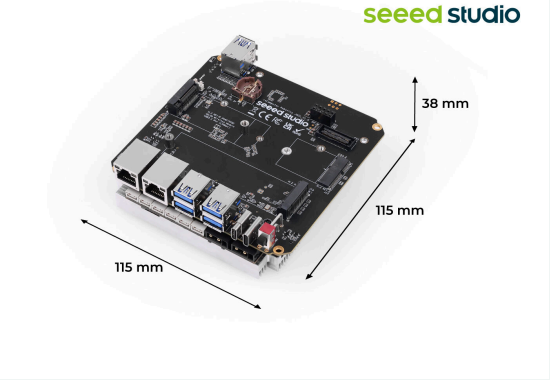






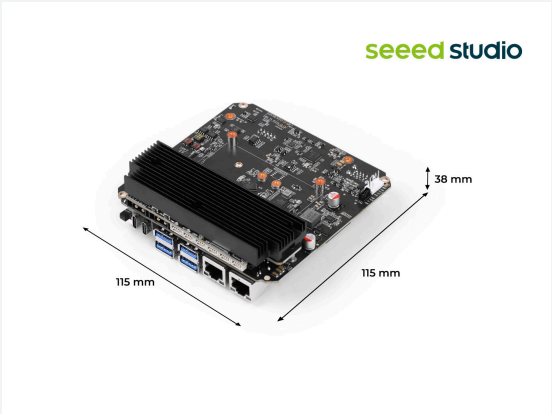












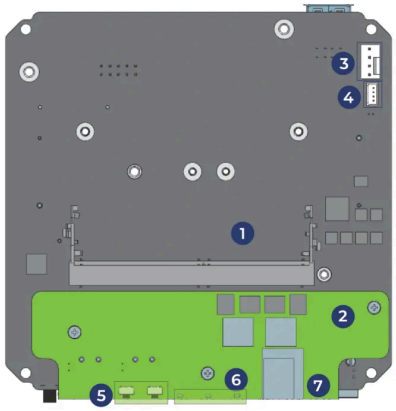
Specification

Carrier Board		
Supported Jetson Module	Jetson Orin Nano/Orin NX	
Supported Module Power	7W | 10W | 15W | 20W | 25W | 40W	
Storage	1x M.2 KEY M PCIe	
Networking	M.2 KEY E	1x M.2 Key E for WiFi/Bluetooth module
	M.2 KEY B	1x M.2 Key B for 5G module
	Ethernet	2x RJ45 Gigabit Ethernet

I/O	USB	6x USB 3.2 Type-A (5Gbps); 1x USB 3.0 Type-C (Host/DP 1.4) 1x USB 2.0 Type-C (Device Mode/Debug);
	Camera	1x 4 in 1 GMSL2(mini fakra)(optional board)
	CAN	2x CAN0(XT30(2+2)) 3x CAN1(4-Pin GH-1.25 Header)
	Display	1x DP1.4(Type C Host)
	UART	1 x UART 4-Pin GH-1.25 Header
	I2C	2x I2C 4-Pin GH-1.25 Header
	Fan	1x 4-Pin Fan Connector (5V PWM) 1x 4-Pin Fan Connector (12V PWM)
	Extension Port	1x Camera Expansion Header(for GMSL2 board)
	RTC	1x RTC 2-pin 1x RTC Socket
	LED	3x LED(PWR, ACT and User LED)
	Pinhole Button	1x PWR 1x RESET
	DIP Switch	1x REC
	Antenna Hole	5x Antenna Hole
Power	19-54V XT30(2+2) (XT30 to 5525 DC Jack Cable included)	
Jetpack Version	Jetpack 6.2	
Mechanical	Dimensions (W x D x H)	115mm x 115mm x 38mm
	Weight	200g
	Installation	Desk, Wall-mounting
Operating Temperature	-20℃~60℃(25W Mode) -20℃~55℃(MAXN Mode) (with reComputer Robotics heat sink with fan)	
Warranty	2 Years	
Certification	RoHS, REACH, CE, FCC, UKCA, KC	

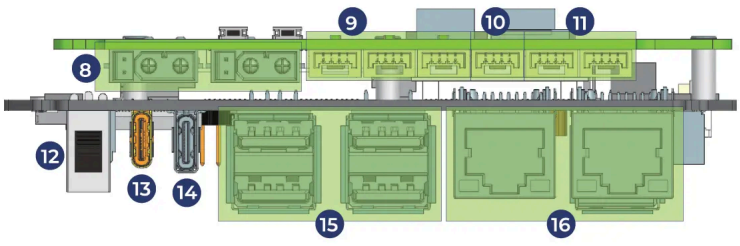
Hardware Overview

reComputer Robotics J401 Carrier Board Placement-Top View



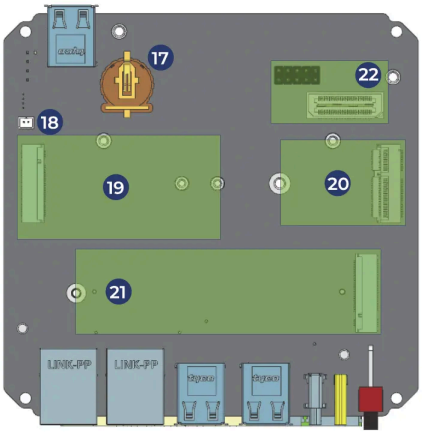
1. Nvidia Jetson Orin Module
2. Power Supply and JST Expansion Board
3. 4-Pin Fan Connector (12V PWM)
4. 4-Pin Fan Connector (5V PWM)
5. 2x Pinhole Button
6. 3x LED Indicator
7. SIM Card Slot

reComputer Robotics J401 Carrier Board Placement-Front View



8. 2x XT30(2+2)
9. 3x CAN1 JST 4-Pin
10. UART JST 4-Pin
11. 2x IIC JST 4-Pin
12. DIP Switch
13. Type C USB 2.0
14. USB3.0/DP1.4
15. 6x Type A USB 3.2
16. 2x RJ45 Ethernet Port

reComputer Robotics J401 Carrier Board Placement-Bottom View



17 RTC Battery Socket
18 RTC 2-Pin Header
19 M.2 Key B Slot
20 M.2 Key E Slot
21 M.2 Key M Slot
22 Camera Expansion Header

Applications

- **Humanoid Robot & Manipulation:** Serving as a powerful brain for humanoid robots, the reComputer Robotics series delivers rich perception with precise motion control. Emulating human-like sensing, dexterity, mobility and whole-body coordination—seamlessly collaborating with people to get tasks done.
- **CAN Bus Millisecond Joint Coordination:** The CAN bus links servos or motors to drive Robotic Arms and Autonomous Robots with millisecond-level joint coordination.
- **UART LiDAR Instant Mapping:** Logistics Robots map in seconds via UART LiDAR, dodge on the fly and shuttle racks nonstop.
- **I²C Sensor Net Early-Maintenance:** I²C weaves temperature, humidity, IMU and fuel-gauge data into a net, giving robots early-maintenance alerts.
- **USB Barcode & Parcel Labeling:** USB cameras scan barcodes while on the move, and a USB ticket printer labels parcels in real time—zero manual labor from inbound to outbound.
- **Dual-RJ45 Link Aggregation <1ms Video:** Dual-RJ45 link-aggregation delivers video to the Edge AI reCopmputer in <1 ms for real-time QC and remote monitoring.
- **High-Performance Vision for Robotics:** Combining a GMSL 2 camera with a reComputer Robotics enables advanced vision-based robotics. Sensing 3MP GMSL 2 camera supports real-time object detection, panoramic environment awareness, and multi-camera 3D reconstruction. The high-bandwidth, low-latency GMSL 2 link supports long cable runs and multi-camera setups, while the Jetson Orin NX delivers real-time AI processing for perception, mapping, and control.
- **3D Vision and GMSL 2 Connectivity for Robotics:** The reComputer Robotics GMSL Extension supports the Orbbec Gemini 335LG Stereo Vision 3D Camera, providing accurate real-time 3D perception for advanced robotics. With the MAX96712 deserializer and mini-FAKRA connector, it ensures secure, low-latency, and reliable data transmission, ideal for AMRs, robotic arms, and collaborative robots. Precise depth sensing enables smarter navigation, robust object recognition, and reliable obstacle avoidance across mobile robots, delivery systems, and shelf-stocking applications.
- **Jetson-Example One-Line Deploy for Edge AI:** 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

reComputer Robotics J401 Carrier Board x 1	x1
Power Supply and JST expansion board x 1	x1
XT30 to DC cable x 1	x1
USB Cable, Type A to Type C x 1	x1
Heat Sink for expansion board	x 1
Stud(M3*30)	x 5
M3 Hexagon nut	x 5
Screw(CM2.5*L.4) for Jetson Module and M.2 Key M	x 3
Screw(CM2*3.0) for M.2 Key E	x 1
Stud(M2*2.0) for M.2 Key B	x 1
Screw(CM3*4.0) for M.2 Key B	x 1
User Manual	x 1

Resource Links

- https://www.seeedstudio.com/reComputer-Robotics-J401-Carrier-Board-optional-accessories.html
- User Manual&Datasheet
- Carrier Board Schematic
- Power Board Schematic
- 3D File
- Mechanical Document-reComputer Robotics PCBA
- Seeed Nvidia Jetson Product Catalog
- Seeed Nvidia Jetson Success Cases
- Seeed Jetson One Pager

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