

INDUSTRIAL PRODUCT DATASHEET

reComputer Industrial R2045-10 - The Most Reliable and Powerful Raspberry Pi Edge AI/IOT Controller

The reComputer Industrial R2045-10 delivers the most reliable and powerful Raspberry Pi Edge AI/IoT control with fanless industrial design, rich connectivity, and optional AI acceleration.

SKU

100026042

UPDATED

2026-05-09 07:34:10

PRICE

\$599.00(Excl. VAT)



Overview



The reComputer Industrial R2045-10 is a reliable and powerful Raspberry Pi CM5-based Edge AI/IoT controller, featuring a Broadcom BCM2712 quad-core Cortex-A76 processor with up to 16GB RAM and advanced heat dissipation for fanless operation in -20°C to 65°C temperatures. It provides robust industrial interfaces including isolated RS485/RS232/DIO, Gigabit PoE, and optional AI acceleration via Hailo-8 delivering up to 26 TOPS, along with versatile wireless connectivity options for LTE, LoRa®, and 5G.

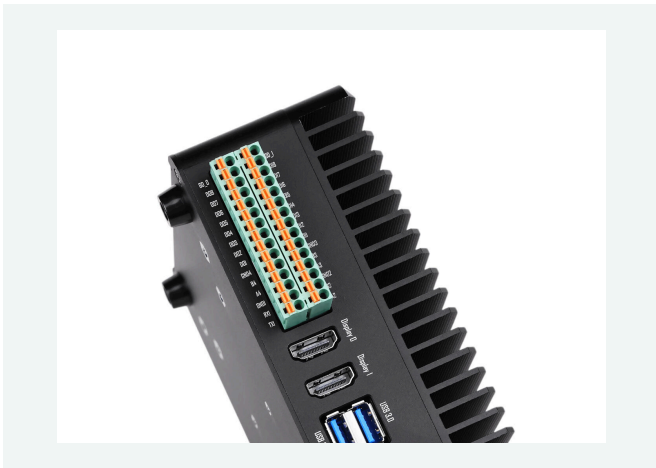
Key Features

Note:

- Options marked with * require additional purchase according to the **bundle**.
- For 4G functionality, both a 4G module and a 4G antenna must be selected.
- For GPS functionality, both a 4G module and a GPS antenna must be selected.
- For LoRaWAN® functionality, LoRaWAN® module must be selected.
- **Price Increase Announcement**
Date: March 2, 2026
Due to increased demand for modules and SSDs, reComputer' pricing is expected to rise by approximately \$20-\$80 in the coming weeks. Please confirm your orders and requirements accordingly to help secure availability.
- **Powerful Performance with Raspberry Pi CM5:** Broadcom BCM2712 quad-core Arm Cortex-A76 64-bit SoC @ 2.4GHz. Features up to 16GB RAM and 32GB eMMC.
- **Robust Heat Dissipation:** High-performance fanless cooling, engineered to handle the intense heat of AI workloads and ensure stable operation from -20°C to 65°C.
- **Industrial-Grade Reliability:** High Accuracy RTC, hardware watchdog and optional UPS supercapacitor. Optional TPM/ATECC608A. IP40, aluminum alloy enclosure provides industrial-grade protection. Supports DIN-rail and wall mounting. Guaranteed production until at least December 2036.
- **AI-Optimized Computing:** With the optional Hailo-8 AI accelerator, it delivers up to 26 TOPS, enabling real-time, high-performance AI vision processing across multiple channels.
- **Rich Industrial Connectivity:** 3x RS485, 1x RS232, 8x DI, 8x DO, all isolated. 1x 10M/100M/1000M Ethernet (PoE), 1x 10M/100M Ethernet. 2x HDMI 2.0. 3x Type-A USB3.0, 1x Type-A USB2.0, 1x Type-C USB2.0 (for OS update). 1x Nano SIM card slot.
- **Versatile Wireless Connectivity:** On chip Wi-Fi and BLE. Flexible expansion via Mini-PCIe for LTE, LoRa®, Zigbee. M.2 B-Key for 4G/5G.

Product Gallery



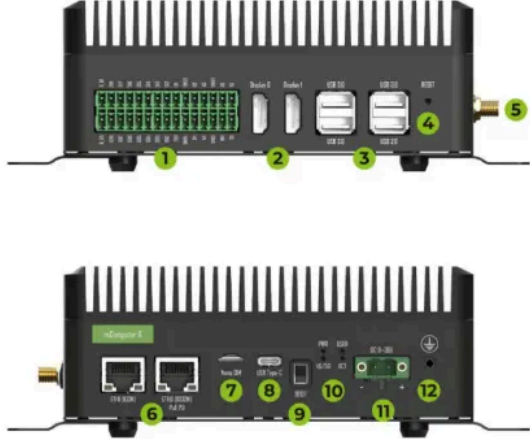


Specification

| Hardware Specification | | |
|------------------------|--|----------|
| Product Series | R20xx-12 | R20xx-10 |
| CPU | Raspberry Pi Compute Module 5, 2.4GHz quad-core 64-bit Arm Cortex-A76 | |
| AI Processor | 1x Pre-installed Hailo-8 M.2 AI Acceleration, 26TOPS | * |
| Operating System | Raspbian, Debian | |
| Memory & Storage | 2GB/4GB/8GB/16GB RAM, 16GB/32GB/64GB eMMC | |
| System Specification | | |
| Power Input | DC 9V~36V, 2-pin Terminal Block | |
| PoE(as powered device) | IEEE 802.3 at Standard 25.5W PoE | |
| Power Switch | No | |
| Reboot Switch | Yes | |
| Interface | | |
| Ethernet & USB | 1x 10/100/1000 Mbps(supports PoE PD); 1x 10/100 Mbps IEEE 802.3/802.3u | |
| | 3x USB-A 3.0 Host; 1x USB-A 2.0 Host; 1x USB-C 2.0 (For flashing OS & Debug) | |
| COM and I/O | 3x RS485(Isolated); 1x RS232(Isolated) | |
| | 8x DI Ports(Isolated), input Voltage: 5~24V DC; 8x DO Ports(Isolated), output Voltage: <60V DC | |
| SIM Card | 1x Nano SIM Card Slot | |

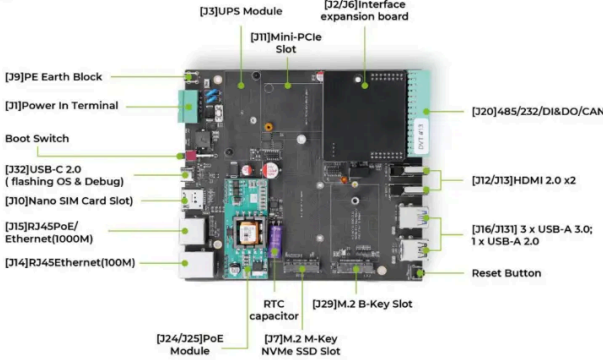
| | | |
|------------------------------------|--|--|
| M.2 Slot | 1x M.2 M-key 2280 Slot for NVMe SSD; 1x M.2 M-key 2280 Slot for AI Accelerator (pre-installed Hailo-8 M.2 AI Acceleration 26TOPS); 1x M.2 B-key 3042/3052 Slot for 5G/4G LTE | 1x M.2 M-key 2280 Slot for NVMe SSD ; 1x M.2 M-key 2280 Slot for AI Accelerator; 1x M.2 B-key 3042/3052 Slot for 5G/4G LTE |
| Mini-PCle | 1x Mini-PCle for LoRa module | |
| Control & Indication | 4x LEDs; 1x Buzzer; 1x Reset Button | |
| HDMI | 2 x HDMI 2.0 | |
| Wireless Communication | Wi-Fi 2.4/5.0 GHz(On-chip); BLE 5.0(On-chip); | |
| | USB LoRa®*/SPI LoRa®* | |
| | 4G LTE/5G* | |
| | USB Zigbee* | |
| Standards | | |
| EMC | ESD: EN61000-4-2, Level 3; EFT: EN61000-4-4, Level 2; Surge: EN61000-4-5, Level 2 | |
| Certification | CE, FCC, TELEC, RoHS, REACH | |
| Device Specification | | |
| Ingress Protection | IP40 | |
| Temperature | Operating Temperature -20~65°C Storage Temperature -40~85°C | |
| Operating Humidity | 10~95% RH | |
| Reliability | SuperCAP UPS LTC3350 Module* | |
| | Hardware Watchdog: 1~255s | |
| | High Accuracy RTC | |
| Security | Encryption Chip TPM 2.0* | |
| | ATECC608A* | |
| Heat Dissipation | Fanless | |
| Warranty | 2 years | |
| Production Lifetime | Until December 2036 | |
| Dimension(W x H x D) & Weight(Net) | 197.5 mm x 155 mm x 67.5 mm, 1280g | |
| Enclosure | 6063 aluminum alloy heat sink, 5052 aluminum alloy enclosure | |
| Mounting | DIN-rail/Wall | |
| Statement | Options marked with * require additional purchase according to the bundle. | |

Hardware Overview



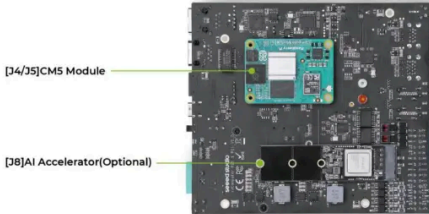
- 1 3x RS485(Isolated) 8 x Isolated DI Ports
1x RS232(Isolated) 8 x Isolated DO Ports
- 2 2 x HDMI 2.0
- 3 3 x USB-A 3.0 Host 1 x USB-A 2.0 Host
- 4 Reset Hole
- 5 5 x Reserved Antenna Ports for Wireless
- 6 1 x 10/100/1000 Mbps(supports PoE PD)
1 x 10/100 Mbps IEEE 802.3/802.3u
- 7 Nano SIM Card Slot
- 8 USB-C 2.0 (For flashing OS & Debug)
- 9 Reboot Switch
- 10 4 x LED indicators
- 11 DC 9V~36V, 2-pin Terminal Block
- 12 Grounding point

Top View

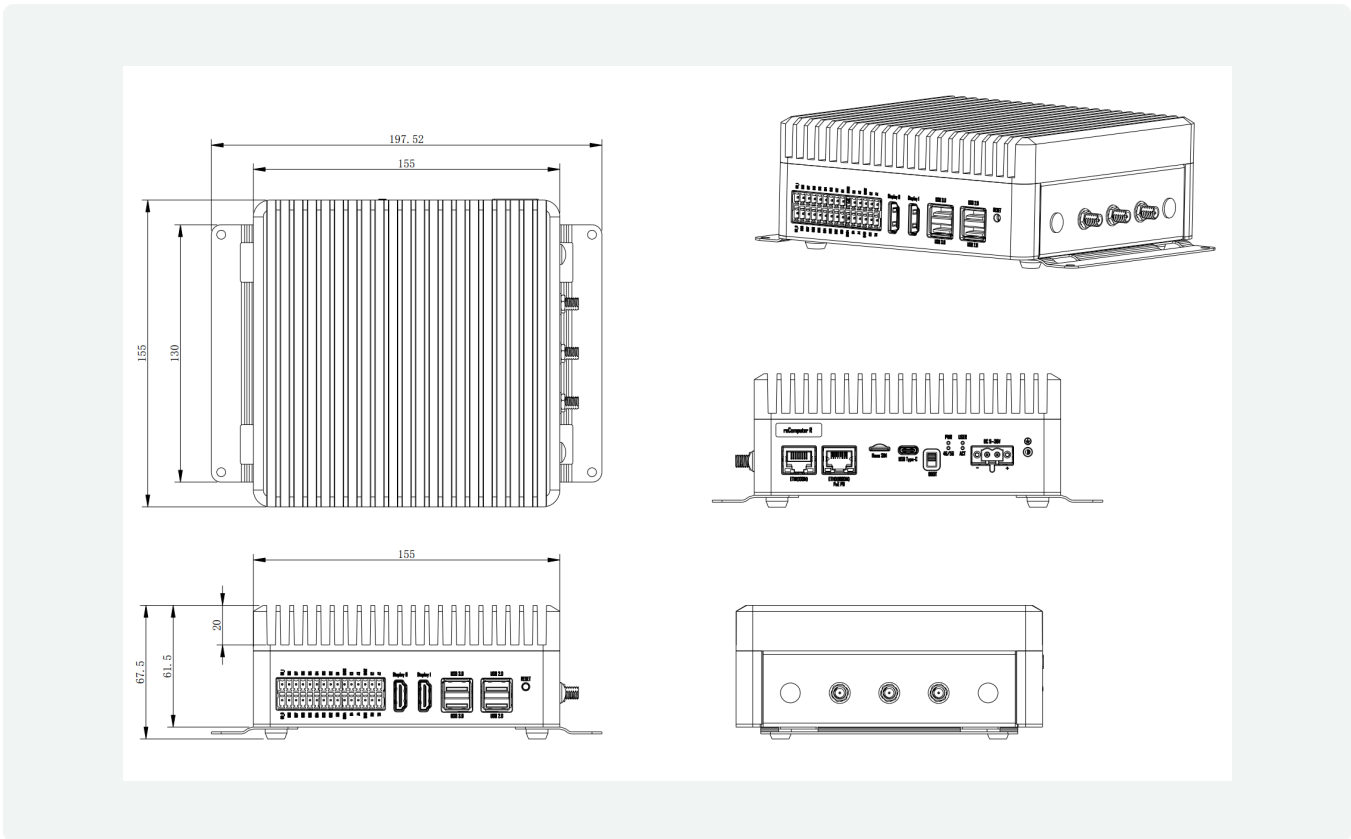


- [D3]UPS Module
- [D2/26]Interface expansion board
- [D1]Mini-PCIe Slot
- [D9]PE Earth Block
- [D1]Power In Terminal
- [D20]485/232/DI&DO/CAN
- Boot Switch
- [D12/2]HDMI 2.0 x2
- [D10]Nano SIM Card Slot
- [D16/13] 3 x USB-A 3.0; 1 x USB-A 2.0
- [D15]RJ45PoE/Ethernet(1000M)
- [D14]RJ45Ethernet(100M)
- [D16/13] 3 x USB-A 3.0; 1 x USB-A 2.0
- Reset Button
- RTC capacitor
- [D29]M.2 B-Key Slot
- [D24/25]PoE Module
- [D7]M.2 M-Key NVMe SSD Slot

Bottom View



- [D4/15]CMS Module
- [D8]AI Accelerator(Optional)



Applications

- Manufacturing & Industrial Automation:** With rich industrial interfaces, the controller integrates seamlessly with different sensors, PLCs, and machinery, enabling efficient process monitoring and control. It supports multiple communication protocols for real-time data acquisition and remote equipment management, fostering a smarter and more efficient factory.
- AI-Powered Video Analytics & Surveillance:** Integrated into NVR systems for real-time video analytics, including anomaly detection, object detection, crowd monitoring and behavior analysis, enhancing situational awareness and security efficiency.
- Smart Transportation:** Acts as an AI/IoT gateway for real-time processing of visual data from multiple sensors and camera feeds at the edge, enabling intelligent traffic flow analysis and smart parking management to enhance transportation monitoring management capabilities.
- Smart Building:** Integrates sensors and IoT devices to monitor and optimize building systems such as lighting, HVAC, and security. Uses AI for energy efficiency, predictive maintenance, and occupant comfort, enhancing building management.
- Smart Retail:** Create innovative smart retail solutions using AI-driven features like real-time visual product recognition, personalized shopping experiences, and advanced customer behavior analytics for optimized store operations.

Part List

| | |
|---|-----|
| reComputer Industrial R2045-10 | x 1 |
| Mounting Bracket | x 2 |
| Bracket Screw | x 4 |
| DIN-rail Clip | x 1 |
| DC Power Female Jack to Screw Terminal Adapter | x 1 |
| 12V/3A Power Adapter (with 4 interchangeable adapter plugs) | x 1 |
| 15*2-pin Terminal Block Connector (Male) | x 1 |
| 120Ω Resistor | x 5 |
| Wi-Fi/BLE Antenna | x 1 |
| User Manual | x 1 |

Compliance & Logistics

| | |
|----------|------------|
| HSCODE | 8471504090 |
| USHSCODE | 8517180050 |
| UPC | |
| EUHSCODE | 8471707000 |
| COO | CHINA |

Resource Links

- <https://www.seeedstudio.com/reComputer-Industrial-R2045-10-p-6545.html>
- [Seeed Raspberry Pi Flyer](#)
- [reComputer_Industrial_R2000_User_Mannual](#)
- [reComputer_industrial_R2000_Schematic](#)
- [reComputer_Industrial_R2000/2100_3D_File](#)
- [Seeed Raspberry Pi Flyer-CN](#)
- [Seeed reComputer Industrial R Series Flyer](#)

Seeed Technology Co.,Ltd.
9F, Building G3, International E City,
Zhongshanyuan Road, Nanshan, Shenzhen, China

Tel: +86 0755-80695676
Web: www.seeed.cc
Shop: www.seeedstudio.com