01 Product Overview

Vibration | Shock | Lightning | Dust/Oil | ESD | Wide Temp. | EMI

The EA-R500E is an industrial edge AI computer built by CESIPC on the Rockchip RK3588, integrating an 8-core CPU, 6 TOPS NPU, and rich industrial I/O. The product supports 4 Gigabit Ethernet ports, HDMI, USB, serial ports, CAN, and DI/DO, and features a fanless design with 9–36V DC wide voltage input, making it suitable for applications such as machine vision, multi-channel video analysis, intelligent robots, and industrial edge gateways.



Features

FlexCore | Fanless | 9~36V | Quad LAN | USB 3.0 | USB 2.0 | Type-C | HDMI | RS-232 | RS-485 | CAN BUS | VESA Mount

Certifications

CE | ISO9001

Key Features

- The core computing module is separated from the industrial carrier board, reducing coupling between the computing platform and peripheral interfaces, facilitating product maintenance, upgrades, and project customization.
- Powered by the Rockchip RK3588 octa-core 64-bit processor, consisting of 4×Cortex-A76 and 4×Cortex-A55, meeting the demands of multi-task computing, image processing, and industrial edge applications.
- Integrated independent NPU providing up to 6 TOPS INT8 AI inference capability, suitable for object detection, image recognition, video structuring, and other edge AI applications.
- Provides 4 Gigabit Ethernet ports, suitable for multi-device networking, multi-channel IP camera access, and multi-channel industrial data transmission.
- Integrates RS-232 / RS-485, CAN, and digital I/O, capable of connecting sensors, PLCs, controllers, actuators, and other field devices.
- Provides HDMI, USB 3.0, USB 2.0, USB Type-C, and Mini PCIe / mSATA interfaces, meeting expansion needs for storage and wireless communication.
- Features an aluminum alloy fanless heat dissipation structure, supports 9–36V DC wide voltage input and hardware auto power-on, meeting long-term continuous operation requirements.
- Supports Linux, Android, and other system environments, and can provide customization services such as BSP, drivers, system images, boot logo, and boot parameters according to project requirements.

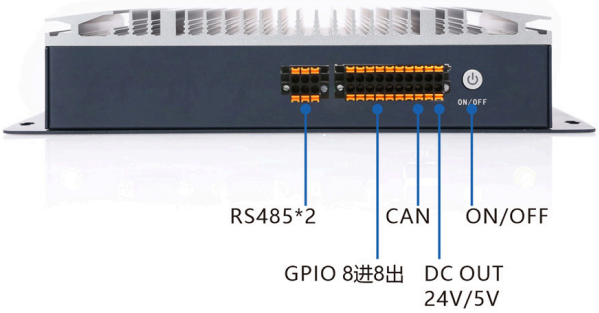
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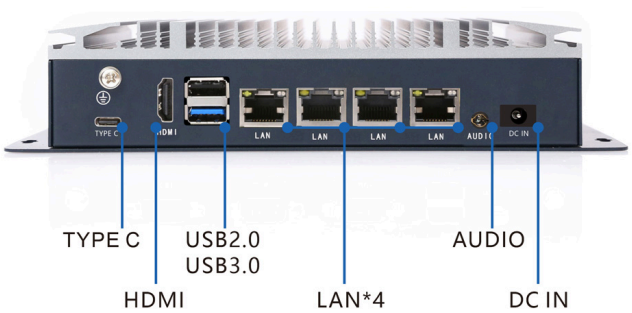
02 Product Images





03 I/O Interface





04 Technical Specifications

• Core Hardware

Parameter	Specification
CPU	8-core 64-bit, 4×Cortex-A76 @ 2.4GHz + 4×Cortex-A55 @ 1.8GHz
NPU Computing Power	6 TOPS(INT8)
GPU	Arm Mali-G610 MP4
Power Consumption TDP	12W
Video Decoding	8K@60fps, supports AV1
Memory	Standard 8GB LPDDR4X, actual capacity subject to order configuration
System Storage	Optional eMMC
Expansion Storage	1 × Full-size Mini PCIe/mSATA slot
Operating System	Android14; Linux (Buildroot/Debian); Domestic OS

I/O Interfaces

Parameter	Specification
USB	1 × USB2.0, 1 × USB3.0 (Type-A)
USB Type-C	1 × USB Type-C, including USB, DP Alt Mode, and CC control signals
Wired Network	4 × Gigabit Ethernet ports (2 native, 2 expanded POE)
Wireless Network	Wi-Fi / 4G / 5G and other communication solutions configurable per project
CAN	1 × CAN bus interface
Serial Port	2 × COM, configurable as RS232 or RS485
GPIO	8 × digital input + 8 × digital output
HDMI	1 × HDMI, supports HDMI 2.0/2.1 configuration
Audio	1 × headphone/microphone combo jack

Power Input

Parameter	Specification
Power Connector	DC5521, supports 9~36V DC wide voltage input
Boot Mode	AT/ATX mode switch
Auto Power-On Design	Hardware-level automatic power-on recovery

Product Attributes

Parameter	Specification
Dimensions	229 (W) × 160 (D) × 45 (H) mm
Weight	0.5 KG net weight
Chassis Material	6061 high-strength aluminum alloy
Mechanical Structure	Aluminum profile heat dissipation structure + sheet metal components
Mounting Method	Desktop, wall mount
Cooling System	Fanless passive cooling
MTBF	60,000 hrs

Operating Environment

Parameter	Specification
Operating Temp.	0~50℃ (wide temp. optional)
Storage Temp.	-10~60℃ (wide temp. optional)
Humidity	10%~95%, non-condensing
EMC	CE, FCC (EN 55032 & EN 55035)
EMC Harmonics	EN IEC 61000-3-2

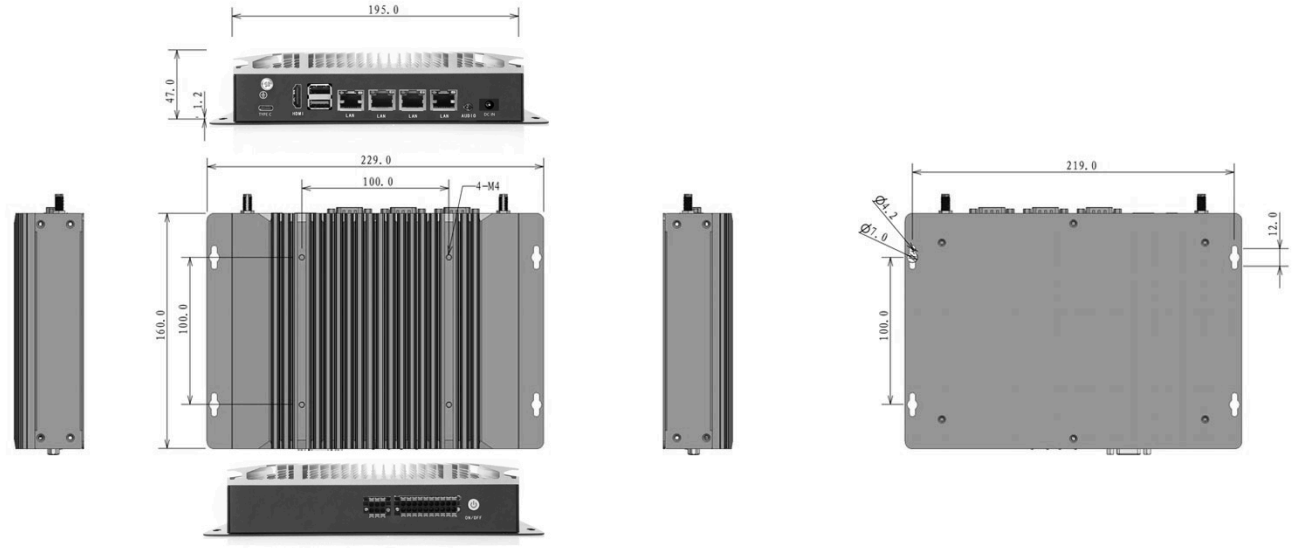
Certifications & Compliance

Parameter	Specification
Factory Cert.	ISO9001: 2015
BIOS Customization	Boot screen customization: supports boot logo, system image, and boot parameter customization

Others

Parameter	Specification
RTC	Onboard independent RTC clock and backup battery interface, independent real-time clock
MXM Connector	Carries power, display, network, PCIe, USB, UART, CAN, I^2C, I^2S, and GPIO signals

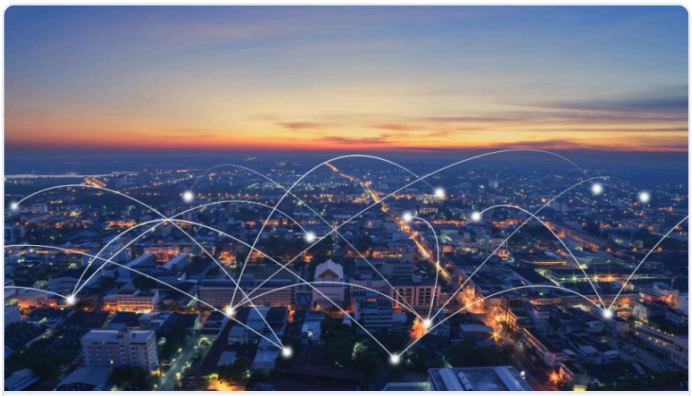
05 Mechanical Dimensions



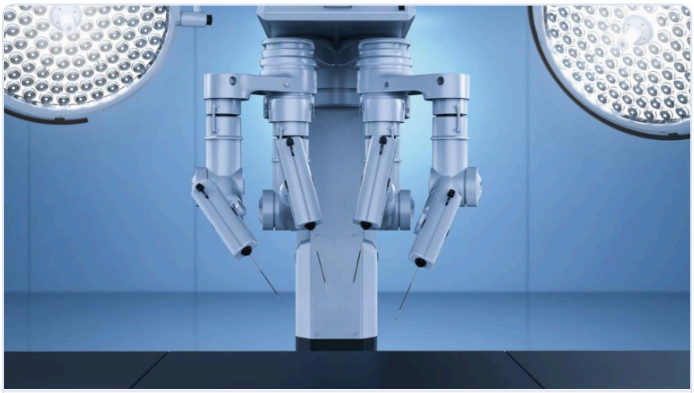
06 Applications



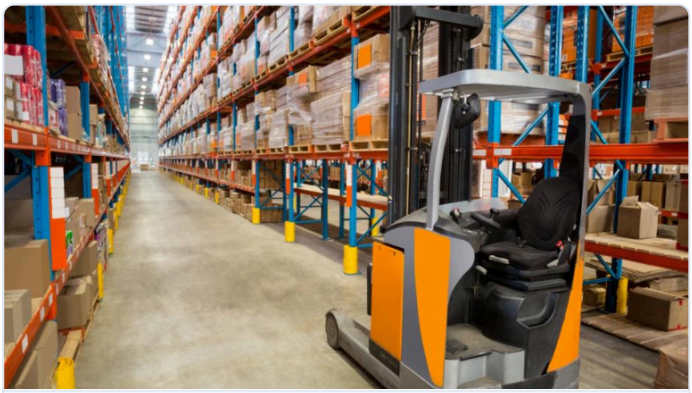
New Retail Sorting



Smart City



Healthcare Surgical Robots



Autonomous Forklifts

07 Ordering Information

NO.	Model	Part No.	Processor	Memory	Storage
1	EA-R500E	/	Rockchip RK3588, 8-core 64-bit: 4×Cortex-A76 + 4×Cortex-A55	8GB LPDDR4X	SSD 128GB

※ Note: Specifications are subject to actual delivery. Please consult our sales team for details.

※ Specifications subject to change without notice. Data measured under standard test conditions.
For customization or support, contact CESIPC: 0755-85286060 · sales@cesipc.com · www.cesipc.com
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