EQIO

ECB-6640

PRODUCT MANUAL

Zhaoxin Fanless Embedded Industrial PC

Embedded industrial PC · Industrial automation · Network gateway



Application illustration (not a product photo); shipped units may differ.

Measurement and control, made easy.

Easy · Quick · Input · Output

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01 OVERVIEW

Zhaoxin Fanless Embedded Industrial PC

Embedded industrial PC · Industrial automation · Network gateway · Embedded central control · Zhaoxin

ECB-6640 uses passive aluminium-fin cooling structure, provides 3-ch RJ45, dual HDMI, multi-channel USB and industrial serial, supports DDR4 memory expansion, suited used for industrial control, network gateway and embedded central control equipment.

4-ch RS-232 and 2-ch composite industrial serial facilitates connect multi type field equipment, SATA I/O used for installation system and data storage. Compact cartridge housing per rely housing cooling, can as control in the cabinet multi Ethernet port communications and equipment management node.



Application illustration (not a product photo); shipped units may differ.

Key features

- Passive aluminium-fin cooling
- 3-ch RJ45 and dual HDMI
- Dual DDR4 SO-DIMM slot
- 4-ch RS-232 and 2-ch composite serial
- External 4-ch USB3.1 Gen1

02 FUNCTIONS

Functions and engineering value

Fanless embedded structure

215 × 195 × 60mm housing used passive aluminium-fin cooling, suited to want reduce fan component embedded deployment. Passive cooling still requires surrounding air stream and suited as installation spacing, complete load under temperature rise should follow main board, CPU and environmental conditions performs verification.

Multi-channel network and industrial serial

3-ch RJ45 connect network devices, 4-ch RS-232 and 2-ch RS-232/RS-422/RS-485 composite I/O used for compatible industrial equipment. Serial quantity has to aggregation multi type peripherals, but port rate, electrical isolated, operation mode and communications protocol requires per specific delivery solution confirm.

Memory storage and display connection

Dual DDR4 SO-DIMM slot up to supports 32GB, SATA3.0 used for system or data storage, dual HDMI can connect display equipment. 4-ch external USB3.1 Gen1 and 3-ch built-in USB2.0 provides peripheral connection, actual memory, HDD and CPU configured with not should from expansion upper limit inferred.

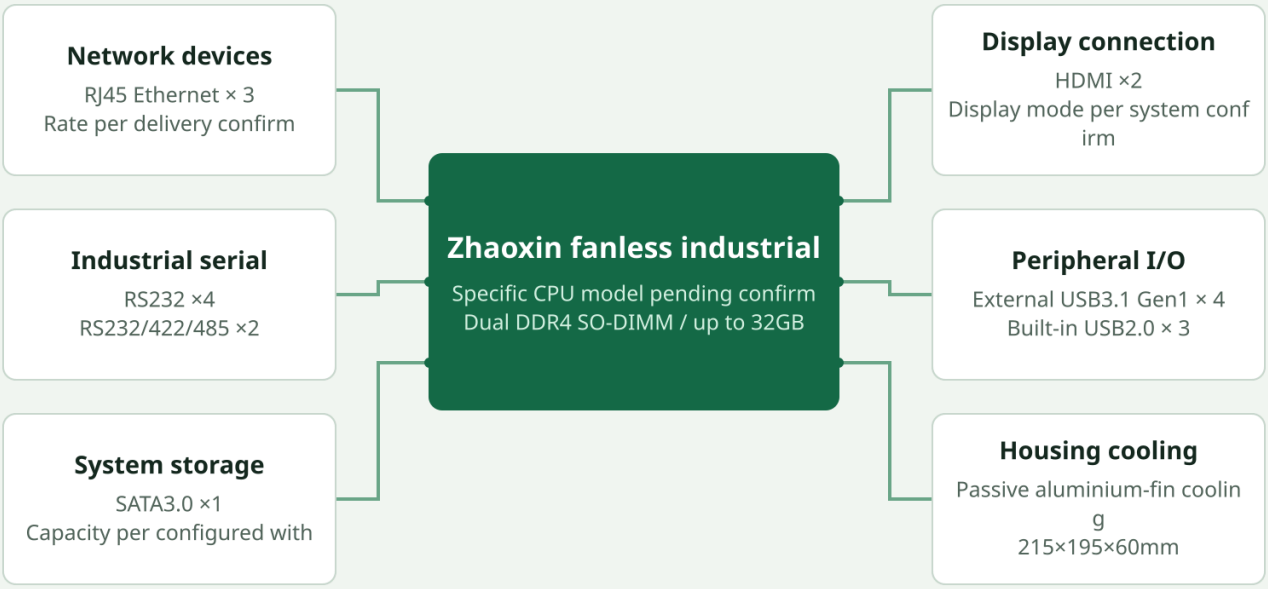
The functional notes explain the product’s role from published configuration. Optional functions, software and peripherals follow the project definition. Chip capability is not the same as implemented I/O.

03 ARCHITECTURE

Product functional architecture

FUNCTIONAL BLOCK DIAGRAM

ECB-6640



Functional relationships · lines do not show internal circuits, pins or dedicated bus topology

From published specification illustrative functional grouping, does not show internal circuits, on-board bus or signal routing; I/O direction actual protocol shall prevail. CPU model, power specification and actual memory storage configured with still requires confirm.

Platform and I/O

Data only stated Zhaoxin compute platform, not specified CPU model, core number and clock, therefore not cite other Zhaoxin processor parameters replace. Platform has 2 DDR4 2400/2666MHz SO-DIMM slot, up to 32GB supports and 1-ch SATA3.0, actual memory, storage and system with installation confirm.

> **Reading the diagram**
>
> Solid lines show published functional relationships, not on-board buses, bridge chips or connector pins. Optional controllers, radios, storage and software follow the configuration and interface files.

04 SPECIFICATIONS

Technical specifications

Compiled from published product data. Batch, I/O and environmental ratings follow the order confirmation.

Core system

Capacity	2 × 260 pin DDR4 2400/2666MHz SO-DIMM slot, maximum supports 32G memory
BIOS	AM UEFI BIOS 256Mbit SPI Flash ROM

Mechanical specifications and system requirements

Dimensions / weight	215mm × 195mm × 60mm (long × wide × high)
Environmental ratings	Operating temperature: 0°C ~ 55°C, storage temperature: -40°C ~ 75°C, 0%~90% relative humidity, non-condensing

I/O and expansion

Network interfaces	3-ch RJ45 Ethernet port
Display interfaces	2-ch HDMI
USB I/O	External: 4 × USB3.1 Gen1; built-in: 3 × USB2.0
Serial	4×RS-232、2×RS-232/422/485
Storage interfaces	1×SATA 3.0

05 APPLICATIONS

From product capability to applications

Industrial device communications gateway

3-ch RJ45 can used for attach different device network, multi-channel serial connect uses compatible protocol instrument or controller, from software completes data aggregation and forwarding. Source data not stated Ethernet port rate and CPU specific model, throughput, protocol load and network function must follow configured with test.

Embedded central control host

Dual HDMI can connect local display UI, USB used for input or maintenance peripherals, serial connect equipment control end. Fanless fin structure facilitates equipment in layout, but installation direction, inside the cabinet temperature and air clearance should include design, not can fanless de no need cooling verification.

Multi serial equipment management

4-ch RS-232 plus 2-ch composite industrial serial suited to centralized management multi unit compatible equipment, SATA storage can save application and log. System should planning port mode, equipment address and polling policy, serial pins, grounding method and external isolated requirement must combined with field equipment item by item confirm.

Integration checks

CPU and system	Source data not to Zhaoxin CPU model, frequency or operating system, selection when complete delivery configured with.
Memory storage	32GB supports upper limit, confirm actual memory capacity and SATA HDD shipped with the unit range.
I/O electrical	Check 3-ch RJ45 rate and 6-ch serial mode, pinout, isolated and terminal conditions.
Power cooling	Input voltage and power consumption must add charge confirm, and 0–55°Ctarget environment verification passive cooling.

06 CONFIGURATION

Configuration, options and selection

Configuration

Uses Zhaoxin compute platform, memory up to supports 32GB, provides 1-ch SATA3.0 I/O.

Selection guide

Order confirmation	Batch, I/O and environmental ratings follow the order confirmation
Published data	Compiled from published product data; EQIO provides selection and system integration
Configuration talk	Share the application, I/O count, environment and software so a configuration can be proposed

Request a quotation and selection support

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EQIO

Easy · Quick · Input · Output

BRAND

Measurement and control, made easy.



EQIO product family · concept rendering

Brand story

EQIO builds measurement and control products and systems. The name stands for Easy Quick Input Output: Easy is a clear structure that is quick to learn, Quick is a direct path to efficient delivery, and Input / Output is every link between the device under test and the control system.
The soft single-cycle wave inside the Q links the brand to signals, acquisition and I/O. “Measurement and control, made easy” is our promise for every selection, integration and delivery.

What we do

Products

Data acquisition, test instruments, control and I/O, modular platforms, software, cables

Systems

Configured to the measurand, channels, accuracy and software, from design to commissioning

Support

Selection advice, training, maintenance and calibration

How we deliver

01
Requirements

02
Solution design

03
Build & integration

04
Factory test

05
Delivery & training

06
Ongoing support

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