

CoreIPC

EPIC60P

3.5-inch Industrial Motherboard Datasheet

Intel® Elkhart Lake Platform

Document	Datasheet
Model	EPIC60P
Issue	1.1
Product Type	3.5-inch Industrial Motherboard
Website	www.CoreIPC.com

This datasheet is prepared based on EPIC60P User Manual Issue 1.1.

1. Product Overview

The EPIC60P is a CoreIPC EPIC-series 3.5-inch industrial motherboard based on the Intel® Elkhart Lake platform. It integrates an Intel® Celeron® J6412 quad-core processor and provides compact industrial I/O including triple-display support, dual Gigabit Ethernet, M.2 expansion, SATA storage, multiple USB and serial interfaces, GPIO, and 12V DC input. It is designed for industrial panel PCs, communication control systems, medical equipment, industrial automation, financial equipment, cloud terminals, and related embedded applications.

2. Key Features

- Integrated Intel® Celeron® J6412 quad-core processor, 2.0 GHz, 10 W TDP; compatible with the Intel® Elkhart Lake processor family.
- 1 x DDR4 SO-DIMM slot supporting single-channel DDR4-3200 memory, up to 32 GB.
- Supports VGA, HDMI 2.0, and LVDS or optional eDP for synchronous/asynchronous triple-display applications.
- Up to 2 x Realtek RTL8111H Gigabit Ethernet ports with Wake-on-LAN and PXE support; single-LAN configuration is optional.
- Storage includes 1 x SATA 3.0 connector and 1 x M.2 Key M 2280 slot supporting PCIe or SATA SSDs with automatic interface detection.
- Wireless expansion includes 1 x M.2 Key E 2230 slot for Wi-Fi/BT and 1 x M.2 Key B 3052 slot for 5G modules, backward-compatible with 4G modules.
- Supports up to 8 USB ports, including 2 x rear USB 3.0 and internal USB 2.0 headers.
- Provides 6 x COM ports. COM1-COM6 default to RS232; COM1/COM2 support RS485, COM3 optionally supports RS485/RS422, and COM4 optionally supports RS485.
- Onboard Realtek ALC897 7.1-channel HD audio with MIC/Line-out and 2-channel 5 W amplifier output at 2 ohms.
- 146 x 102 mm 3.5-inch form factor, 12V DC input, AT/ATX power-mode selection, and -20°C to 60°C operating temperature.

3. Technical Specifications

Category	Specification
CPU	Integrated Intel® Celeron® J6412 quad-core processor, 2.0 GHz, 10 W TDP; compatible with the Intel® Elkhart Lake processor family.
Memory	1 x 260-pin DDR4 SO-DIMM slot; single-channel DDR4-3200; up to 32 GB.
Graphics / Display	Integrated 10th-generation Intel® UHD Graphics. 1 x VGA, 1 x HDMI 2.0, and 1 x LVDS or hardware-configurable eDP interface. Supports synchronous/asynchronous triple display.
Ethernet	2 x Realtek RTL8111H Gigabit Ethernet controllers with Wake-on-LAN and PXE support; optional single-LAN configuration.
Storage	1 x SATA 3.0 connector, up to 6 Gbps; 1 x M.2 Key M 2280 slot supporting PCIe or SATA SSDs with automatic interface detection.
Audio	Realtek ALC897 7.1-channel HD audio; MIC/Line-out; 2-channel amplifier output, 5 W per channel at 2 ohms.
Expansion	1 x M.2 Key E 2230 for Wi-Fi/BT; 1 x M.2 Key B 3052 for 5G, backward-compatible with 4G 3042 modules.
USB	Up to 8 USB ports: 2 x rear USB 3.0 plus USB 2.0 through onboard headers; actual population depends on LAN/model configuration.
Serial Ports	6 x COM. COM1-COM6 default to RS232; COM1/COM2 support RS485; COM3 optionally supports RS485/RS422; COM4 optionally supports RS485. Optional six-TTL configuration is available.
GPIO	4-channel GPIO input/output.
BIOS	128 Mb Flash ROM.
Watchdog	Hardware watchdog timer, 256 levels, 0-255 seconds.
OS Support	Windows 10 / Windows 11 / Linux.
Power	12V DC input; 2-pin Phoenix terminal or 4-pin ATX input depending on configuration; AT/ATX power mode supported.
Operating Temperature	-20°C to 60°C.
Storage Temperature	-20°C to 70°C.
Operating Humidity	5%-95% RH, non-condensing.
Dimensions	146 mm x 102 mm.

4. I/O Interface Summary

4.1 Rear Panel I/O

Interface	Description
Display	1 x HDMI 2.0; 1 x VGA.
USB	2 x USB 3.0 ports.
LAN	Up to 2 x RJ45 Gigabit Ethernet ports; optional single-LAN configuration.
Audio / Indicators	1 x Line-out jack; 1 x Power/HDD LED indicator; 1 x Clear CMOS button.
Power	1 x 12V DC input connector.

4.2 Internal I/O and Headers

Interface / Header	Description
Panel Display	1 x 2 x 15-pin LVDS header, dual-channel 24-bit; hardware-configurable for eDP, LVDS default.
Backlight	1 x 1 x 6-pin LCD backlight power connector.
USB 2.0	3 x 2 x 5-pin USB 2.0 headers are provided; F_USB3 is not populated by default. Interface population depends on model/configuration.
Serial	2 x 2 x 5-pin COM1/COM2 headers plus 1 x 2 x 20-pin header for COM3-COM6; optional RS485/RS422 functions require the specified jumper/hardware configuration.
Audio	1 x 2 x 5-pin front-audio header; 1 x 1 x 4-pin amplifier header.
GPIO	1 x 2 x 5-pin GPIO header, 4 inputs / 4 outputs.
Storage Power	1 x 1 x 4-pin SATA power connector; 1 x optional 2 x 5-pin SATA 3.0 header.
Front Panel	1 x 2 x 5-pin front-panel switch and LED header.
Fan	1 x reserved 4-pin smart fan header.
Power	1 x optional 2-pin Phoenix 12V input; 4-pin ATX input is also specified in the source manual.

5. Display Support

EPIC60P provides VGA and HDMI 2.0 display outputs together with an onboard LVDS interface. The LVDS header can be hardware-configured as eDP, with LVDS as the default configuration. The board supports synchronous/asynchronous triple-display use through VGA, HDMI, and LVDS/eDP.

Item	Description
Integrated Graphics	10th-generation Intel® UHD Graphics.
VGA	1 x VGA display output.
HDMI	1 x HDMI 2.0 display output.
LVDS / eDP	1 x dual-channel 24-bit LVDS header. Can be hardware-configured as eDP; LVDS is default.
Panel Voltage	LCDVDD selectable at 3.3V / 5V / 12V; backlight power selectable at 5V / 12V.
Multi-display	Supports synchronous/asynchronous triple-display operation via VGA, HDMI and LVDS/eDP.

6. Serial Port Configuration

Port	Default / Optional Function
COM1	RS232 by default; supports RS485 through jumper selection.
COM2	RS232 by default; supports RS485 through jumper selection.
COM3	RS232 by default; optional RS485 or RS422 requires hardware modification.
COM4	RS232 by default; optional RS485 requires hardware modification.
COM5 / COM6	RS232 by default.
Optional TTL	COM1-COM6 can optionally be configured as six TTL serial ports.

7. Power, Cooling and Reliability Functions

Item	Description
Main Power	12V DC input.
Power Connector	1 x 2-pin Phoenix terminal or 1 x 4-pin ATX connector, depending on configuration.
AT / ATX Mode	AT/ATX power-mode selection through AT-ATX1 jumper; auto power-on can be enabled or disabled.
Thermal Design	Source manual states support for fanless thermal design and fully enclosed systems.
Fan Header	1 x reserved 4-pin smart fan header with GND, +12V, DET and PWM.
Watchdog	Hardware watchdog timer, 256 levels, 0-255 seconds.
Clear CMOS	JBAT1 Clear CMOS jumper; rear Clear CMOS button is also specified.

8. Mechanical and Environmental Information

Item	Description
Form Factor	3.5-inch industrial motherboard.
Dimensions	146 mm x 102 mm.
Operating Temperature	-20°C to 60°C.
Storage Temperature	-20°C to 70°C.
Operating Humidity	5%-95% RH, non-condensing.
Cooling	Supports fanless thermal design; reserved smart fan header is available.
Installation Notes	Use ESD protection and power off the system before installation, removal or hardware reconfiguration.

9. Ordering Information

Model	Description
EPIC60P-L16 VER1.1	Intel® Celeron® J6412, 4 cores, 2.0 GHz; DDR4; HDMI; VGA; LVDS; 1 LAN; 8 USB; 6 COM / 2 RS485; 12V.
EPIC60P-L26 VER1.1	Intel® Celeron® J6412, 4 cores, 2.0 GHz; DDR4; HDMI; VGA; LVDS; 2 LAN; 8 USB; 6 COM / 2 RS485; 12V.
EPIC60P-IO VER1.1	I/O board option listed in the source manual; 4 USB; 6 COM / 2 RS485. Other fields are not specified.
Options	eDP, RS485/RS422, six-TTL serial configuration, single/dual LAN and selected connector populations depend on the production configuration and may require hardware modification.

10. Compliance and Documentation Notes

- Certification and compliance information is not specified in the source manual. Contact CoreIPC for project-specific certification or compliance documentation.
- LVDS is the default panel-interface configuration. eDP requires hardware configuration and should be confirmed before ordering. The panel interface supports 3.3V, 5V, or 12V LCD operating voltage and 5V or 12V backlight power selection.
- USB, LAN, serial-port and optional I/O population can vary by model and hardware configuration. Functions requiring hardware modification should be confirmed before order placement.

11. Contact Information

Company	CoreIPC
Sales Team	CoreIPC Sales Team
Email	sales@coreipc.com
Website	https://www.coreipc.com/

Disclaimer: This datasheet was compiled from EPIC60P User Manual Issue 1.1. Product specifications, interface counts and optional functions may vary by production configuration. Please confirm the selected configuration before order placement. All product names, trademarks and registered trademarks are the property of their respective owners.