

CoreIPC

EPIC40P

3.5-inch Industrial Motherboard Datasheet

Intel® Gemini Lake Refresh Platform

Document	Datasheet
Model	EPIC40P
Issue	1.2
Product Type	3.5-inch Industrial Motherboard
Website	www.CoreIPC.com

This datasheet is prepared based on EPIC40P User Manual Issue 1.2.

1. Product Overview

The EPIC40P is a CoreIPC 3.5-inch industrial motherboard supporting Intel® Gemini Lake Refresh processors. It combines DDR4 memory, VGA/HDMI/LVDS or optional eDP display, dual Gigabit Ethernet, SATA and M.2 storage, M.2 Key E / Key B wireless expansion, multiple USB and serial interfaces, GPIO, audio amplification, and 12 V DC input for commercial displays, communication control, medical equipment, industrial automation, financial equipment, cloud terminals, and other embedded applications.

2. Key Features

- Integrated Intel® Celeron® J4125 2.0 GHz quad-core processor, compatible with the Intel® Gemini Lake Refresh processor family.
- 1 x DDR4 SO-DIMM slot supporting single-channel DDR4-2400 memory. Detailed specifications list up to 8 GB; Product Description states up to 16 GB.
- VGA, HDMI and LVDS or optional eDP display interfaces; supports synchronous/asynchronous triple-display output.
- 2 x Realtek RTL8111H Gigabit Ethernet ports with Wake-on-LAN and PXE boot support.
- 1 x SATA 3.0 connector plus 1 x M.2 Key M SSD slot; Key M uses SATA by default and can be hardware-configured for NVMe.
- 1 x M.2 Key E 2230 slot for Wi-Fi and 1 x M.2 Key B 3052 slot for 4G/5G modules.
- 2 x USB 3.0 plus 4 x USB 2.0 by default; up to 6 x USB 2.0 when 4G/5G functionality is not required.
- 6 x COM ports. COM1/COM2 support RS232/RS485; COM3 supports optional RS485/RS422; COM4 supports optional RS485; optional 6 x TTL configuration.
- Realtek ALC897 7.1-channel HD audio with MIC/Line-out and dual-channel 5 W amplifier output for 2-ohm speakers.
- 146 x 102 mm 3.5-inch form factor; 12 V DC input; fanless thermal design; detailed specification operating temperature -10°C to 60°C.

3. Technical Specifications

Category	Specification
Processor	Integrated Intel® Celeron® J4125 quad-core processor, 2.0 GHz, 10 W TDP; compatible with Intel® Gemini Lake Refresh processors.
Memory	1 x SO-DIMM; single-channel DDR4-2400. Detailed specifications: up to 8 GB. Product Description: up to 16 GB.
Graphics / Display	Intel® UHD Graphics 600; 1 x VGA, 1 x HDMI, and 1 x LVDS or eDP interface (LVDS default). Supports synchronous/asynchronous triple display.
Ethernet	2 x Realtek RTL8111H Gigabit Ethernet controllers; Wake-on-LAN and PXE support.
Storage	1 x SATA 3.0 connector, up to 6 Gbps; 1 x M.2 Key M SSD slot, SATA by default and hardware-configurable for NVMe.
Audio	Realtek ALC897 7.1-channel HD audio; MIC/Line-out; dual-channel 5 W amplifier output for 2-ohm speakers.
Expansion	1 x M.2 Key E 2230 for Wi-Fi; 1 x M.2 Key B 3052 for 4G/5G.
USB	2 x USB 3.0; 4 x USB 2.0 by default, up to 6 x USB 2.0 when 4G/5G is not required.
Serial Ports	6 x COM. COM1/COM2 support RS232/RS485; COM3 supports optional RS485/RS422; COM4 supports optional RS485; optional 6 x TTL configuration.
GPIO	4-channel GPIO input/output.
BIOS	64 Mb Flash ROM.
Watchdog	Hardware watchdog timer, 256 levels (0-255 seconds).
OS Support	Windows 10 / Linux.
Power	12 V DC input; optional 2-pin Phoenix terminal or 4-pin ATX input.
Operating Temperature	-10°C to 60°C in detailed specifications; Product Description states -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; 1 x VGA.
USB	2 x USB 3.0.
LAN	2 x RJ45 Gigabit Ethernet.
Audio / Status	1 x Line-out (green); 1 x Power/HDD LED indicator.
Power	1 x 12 V DC input connector.

4.2 Internal I/O and Headers

Interface / Header	Description
LVDS / eDP	1 x 2 x 15-pin dual-channel 24-bit LVDS header; hardware-configurable for eDP; LVDS default.
Backlight	1 x 6-pin LVDS/eDP backlight power connector; selectable 5 V / 12 V.
USB 2.0	3 x 2 x 5-pin headers; 4 USB 2.0 ports by default, up to 6 when 4G/5G is not required; F_USB3 is not populated by default.
Serial	2 x standard JCOM headers plus 1 x 2 x 20-pin four-port header for COM3-COM6.
RS485 / RS422	COM1/COM2 support RS485 by jumper; COM3 optional RS485/RS422; COM4 optional RS485; hardware modification required for COM3/COM4 differential modes.
Audio	1 x front-audio header; 1 x 4-pin amplified speaker output header.
Storage Power	1 x SATA drive power connector; optional 2 x 5-pin SATA 3.0 header.
Front Panel / GPIO	1 x front-panel switch/LED header; 1 x GPIO header.
Fan	1 x reserved 4-pin CPU smart-fan header.
Power Input	1 x optional 2-pin Phoenix terminal or 1 x 4-pin ATX connector for 12 V DC input.

5. Display Support

EPIC40P provides VGA and HDMI together with a dual-channel 24-bit LVDS interface. The LVDS interface can be hardware-configured as eDP; LVDS is the default configuration. The source manual specifies synchronous/asynchronous triple-display output via VGA, HDMI and LVDS/eDP, with selectable 3.3 V / 5 V / 12 V panel voltage and 5 V / 12 V backlight power.

Item	Description
Integrated Graphics	Intel® UHD Graphics 600.
VGA	1 x VGA output.
HDMI	1 x HDMI output.
LVDS	Dual-channel 24-bit LVDS; default configuration.
eDP	Optional via hardware conversion of the LVDS interface; must be specified before ordering.
Multi-display	Supports synchronous/asynchronous triple-display output via VGA, HDMI and LVDS/eDP.
Panel Power	Selectable 3.3 V / 5 V / 12 V panel voltage; selectable 5 V / 12 V backlight power.

6. Serial Port Configuration

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

7. Power, Cooling and Reliability Functions

Item	Description
Main Power	12 V DC input.
Power Connector Options	Optional 2-pin Phoenix terminal or 4-pin ATX connector.
AT / ATX Mode	AT-ATX1 jumper selects automatic power-on behavior.
Cooling	Fanless thermal design; 1 x reserved 4-pin CPU smart-fan header.
Watchdog	Hardware watchdog timer, 256 levels (0-255 seconds).
Clear CMOS	JBAT1 1 x 3-pin Clear CMOS jumper.

8. Mechanical and Environmental Information

Item	Description
Form Factor	3.5-inch industrial motherboard.
Dimensions	146 mm x 102 mm.
Operating Temperature	-10°C to 60°C in detailed specifications; Product Description states -20°C to 60°C.
Storage Temperature	-20°C to 70°C.
Operating Humidity	5%-95% RH, non-condensing.
Power Input	12 V DC.

9. Ordering Information

Model	Description
EPIC40P-L26 VER1.1	Intel® Celeron® J4125; 4 cores; 2.0 GHz; DDR4; HDMI + VGA + LVDS; 2 LAN; 6 USB; 6 COM / 2 RS485; 12 V DC.
EPIC40P-IO VER1.0	I/O expansion board; 4 USB; 6 COM / 2 RS485.
Storage Option	M.2 Key M supports SATA by default; NVMe requires hardware configuration.
Wireless Option	M.2 Key E 2230 for Wi-Fi; M.2 Key B 3052 for 4G/5G.
Serial Option	Up to 4 RS485 or optional RS422/TTL configurations require advance confirmation.

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.
- Memory capacity differs by section: Product Description states DDR4-2400 up to 16 GB, while the detailed Motherboard Specifications table states up to 8 GB. This datasheet uses 8 GB in the main specification table and flags the discrepancy for confirmation before ordering.
- Version and temperature information also differ by section. The manual is Issue 1.2, while Ordering Information lists EPIC40P-L26 VER1.1 and EPIC40P-IO VER1.0. Product Description states -20°C to 60°C operation, while the detailed specification states -10°C to 60°C. Confirm the production revision and required temperature range.

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 EPIC40P User Manual Issue 1.2. Product specifications, interface counts, supported functions and optional configurations may vary by production revision. Please confirm the selected configuration before order placement. All product names, trademarks and registered trademarks are the property of their respective owners.