

CoreIPC

EPIC19P-R

3.5-inch Industrial Motherboard Datasheet

Intel® Bay Trail Platform

Document	Datasheet
Model	EPIC19P-R
Issue	1.1
Product Type	3.5-inch Industrial Motherboard
Website	www.CoreIPC.com

This datasheet is prepared based on EPIC19P-R User Manual Issue 1.1.

1. Product Overview

The EPIC19P-R is a CoreIPC 3.5-inch industrial motherboard supporting Intel® Bay Trail-I/M/D series processors. It combines DDR3L memory, VGA/HDMI/LVDS or optional eDP display, up to dual Gigabit Ethernet, SATA and mSATA storage, Mini PCIe expansion, multiple USB and serial interfaces, GPIO, PS/2, optional Phoenix power input, and 12 V DC operation for industrial automation, machine vision, medical equipment, financial equipment, cloud terminals, and other embedded applications.

2. Key Features

- Integrated Intel® Celeron® J1900 2.0 GHz quad-core processor; compatible with Intel® Bay Trail-I/M/D series processors.
- 1 x DDR3L SO-DIMM slot supporting single-channel DDR3L-1333/1600 at 1.35 V, up to 8 GB.
- VGA, HDMI 1.2, and LVDS display interfaces; eDP is optional through hardware configuration and must be confirmed before ordering.
- Up to 2 x Realtek Gigabit Ethernet ports with Wake-on-LAN and PXE boot support; single-LAN configuration optional.
- Storage includes 1 x SATA 2.0 interface and 1 x mSATA 2.0 slot.
- 1 x Mini PCIe slot supporting half-size/full-size Wi-Fi or 4G modules, plus SIM header.
- Supports up to 6 USB ports, including 1 x USB 3.0 and USB 2.0 interfaces.
- Provides 6 x RS232 serial ports; COM1/COM2 support RS485 by default, COM2 optionally supports RS422, and COM3/COM4 can optionally support RS485 for up to 4 x RS485.
- Onboard Realtek ALC662 / ALC897 / ALC262 6-channel HD audio with MIC/Line-out and 3 W amplifier output.
- 146 x 102 mm 3.5-inch form factor; fanless cooling design; 12 V DC $\pm 5\%$ input; -20°C to 60°C operating temperature.

3. Technical Specifications

Category	Specification
Processor	Integrated Intel® Celeron® J1900 2.0 GHz quad-core processor; compatible with Intel® Bay Trail-I/M/D series processors.
Memory	1 x SO-DIMM; single-channel DDR3L-1333/1600, 1.35 V; up to 8 GB.
Graphics / Display	Integrated Intel® HD Graphics; 1 x VGA, 1 x HDMI 1.2, and 1 x LVDS interface. eDP is optional through hardware configuration.
Ethernet	Up to 2 x Realtek Gigabit Ethernet controllers; single-LAN option; Wake-on-LAN and PXE boot support.
Storage	1 x SATA 2.0 interface; 1 x mSATA 2.0 slot.
Audio	Realtek ALC662 / ALC897 / ALC262 6-channel HD audio; MIC/Line-out; 3 W amplifier output.
Expansion	1 x Mini PCIe slot supporting half-size/full-size Wi-Fi or 4G modules; 1 x SIM header.
USB	1 x USB 3.0 rear port, 1 x USB 2.0 rear port, plus 4 x USB 2.0 through onboard headers; up to 6 USB ports total.
Serial Ports	6 x COM ports. COM1/COM2 support RS485 by default; COM2 optional RS422; COM3/COM4 optional RS485. Up to 4 x RS485 supported.
Legacy I/O	1 x PS/2 keyboard/mouse header.
GPIO	4-channel GPIO input/output.
BIOS	64 Mb Flash ROM.
Watchdog	Hardware watchdog timer, 256 levels (0-255 seconds).
OS Support	Windows 7 / Windows 10 / Linux.
Power	12 V DC input, $\pm 5\%$; 2-pin Phoenix terminal or 4-pin ATX connector supported.
Dimensions	146 mm x 102 mm.
Environment	Operating: -20°C to 60°C; Storage: -20°C to 70°C; Humidity: 5%-95% RH, non-condensing.

4. I/O Interface Summary

4.1 Rear Panel I/O

Interface	Description
Display	1 x HDMI 1.2; 1 x VGA.
USB	1 x USB 3.0; 1 x USB 2.0.
LAN	2 x RJ45 Gigabit Ethernet ports; single-LAN configuration optional.
Audio	1 x Line-out jack (green).
Power	1 x 12 V DC input; HDD/Power LED indicator.

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 to eDP; LVDS default.
Backlight	1 x 1 x 6-pin panel backlight power connector.
USB 2.0	2 x 2 x 5-pin USB 2.0 headers supporting 4 USB 2.0 ports.
Serial	2 x 2 x 5-pin standard COM headers plus 1 x 2 x 20-pin four-port serial header for COM3-COM6.
RS485 / RS422	COM1/COM2 support RS485; COM2 optional RS422; COM3/COM4 optional RS485; 1 x 2 x 3-pin RS485 header.
PS/2	1 x 1 x 6-pin keyboard/mouse header.
Audio	1 x front-audio header; 1 x 4-pin amplifier header.
SIM	1 x 2 x 3-pin SIM header for 4G connectivity.
Power / Panel	1 x HDD power connector; 1 x front-panel switch/LED header; optional I/O-board power header.
Fan / GPIO	1 x 4-pin CPU fan header; 1 x GPIO header.

5. Display Support

EPIC19P-R provides VGA, HDMI 1.2, and LVDS display outputs. The LVDS interface supports dual-channel 24-bit output and can be hardware-configured as eDP. The source manual specifies synchronous or asynchronous dual-display operation using VGA, HDMI, and LVDS.

Item	Description
Integrated Graphics	Intel® HD Graphics.
VGA	1 x VGA output.
HDMI	1 x HDMI 1.2 output.
LVDS	1 x dual-channel 24-bit LVDS interface, default configuration.
eDP	Optional through hardware conversion of LVDS; confirm before ordering.
Multi-display	Supports synchronous/asynchronous dual-display output through VGA, HDMI, and LVDS.

6. Serial Port Configuration

Port / Source	Default / Optional Function
COM1	RS232 default; RS485 supported through jumper configuration.
COM2	RS232 default; RS485 supported through jumper configuration; optional RS422.
COM3	RS232 default; optional RS485.
COM4	RS232 default; optional RS485.
COM5-COM6	RS232.
Expansion I/O	EPIC19P-IO VER1.1 provides 6 x DB9 serial ports; COM1/COM2 support RS485 by default.

7. Power, Cooling and Reliability Functions

Item	Description
Main Power	12 V DC input, $\pm 5\%$ tolerance.
Power Connector Options	1 x 2-pin Phoenix terminal or 1 x 4-pin ATX connector.
AT / ATX Mode	AT-ATX1 jumper selects automatic power-on behavior.
Cooling	Fanless thermal design with 1 x 4-pin CPU fan header.
Watchdog	Hardware watchdog timer, 256 levels (0-255 seconds).
Clear CMOS	JBAT1 1 x 3-pin Clear CMOS jumper.
Panel Power	LVDS/eDP panel voltage options 3.3 V / 5 V / 12 V; backlight power 5 V / 12 V.

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.
Power Input	12 V DC, $\pm 5\%$.
Cooling	Fanless-capable design with CPU fan header.

9. Ordering Information

Model	Description
EPIC19P-R VER1.1	Intel® Celeron® J1900; 4 cores; 2.0 GHz; DDR3L; HDMI + VGA + LVDS; 2 LAN; 6 USB; PS/2; 6 COM / up to 4 RS485; 12 V DC.
EPIC19P-IO VER1.1	Companion I/O board: 6 x DB9 serial ports, up to 4 x RS485, 4 x USB 2.0, 1 x MIC, illuminated power button, HDD LED and reset button.
LAN Option	Single-LAN configuration optional; when used with single-LAN motherboard, only 2 USB 2.0 ports on the I/O board are functional.
Display Option	LVDS standard; eDP requires hardware configuration and advance confirmation.
Power Option	Optional locking Phoenix power connector / I/O-board power interface available depending on configuration.

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.
- The source manual lists multiple supported audio codec options: Realtek ALC662, ALC897, or ALC262. The exact codec depends on the production BOM and should be confirmed before ordering.
- The detailed specification table and I/O layout still reference EPIC19P VER1.0 / EPIC19P-IO VER1.0 in places, while the document, board photo, and companion I/O-board description identify EPIC19P-R VER1.1 / EPIC19P-IO VER1.1. This datasheet follows the EPIC19P-R Issue 1.1 document and preserves these source-version differences in this note.

11. Contact Information

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Disclaimer: This datasheet was compiled from EPIC19P-R 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.