

CoreIPC

ITX18P

Mini-ITX Industrial Motherboard Datasheet

Intel® Bay Trail Platform

Document	Datasheet
Model	ITX18P
Issue	1.1
Product Type	Mini-ITX Industrial Motherboard
Website	www.CoreIPC.com

This datasheet is prepared based on ITX18P User Manual Issue 1.1.

1. Product Overview

The ITX18P is a CoreIPC Mini-ITX industrial motherboard supporting Intel® Bay Trail-I/M/D series processors. It integrates DDR3L memory, VGA/HDMI/LVDS or optional eDP display, dual Gigabit Ethernet, SATA and mSATA storage, Mini PCIe and PCI expansion, extensive USB and serial connectivity, legacy PS/2 and LPT interfaces, GPIO, and 12 V DC input for industrial control, embedded systems, communication, and other industrial 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, and LVDS or optional eDP display interfaces with synchronous/asynchronous display support.
- Up to 2 x Realtek RTL8111H Gigabit Ethernet ports with Wake-on-LAN and PXE; single-LAN configuration optional.
- Storage includes 1 x SATA 2.0 connector and 1 x full-size mSATA slot.
- 1 x Mini PCIe slot for Wi-Fi/4G plus 1 x optional PCI expansion slot.
- Supports up to 8 x USB 2.0 ports.
- Provides up to 10 x RS232 serial ports and up to 4 x RS485 ports; COM2 can optionally support RS422.
- Onboard ALC662 6-channel HD audio with MIC/Line-out and dual-channel 5 W amplifier output at 2 ohms.
- 170 x 170 mm Mini-ITX form factor; 12 V DC input; fanless thermal design; wide-temperature support is specified in the source manual.

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 204-pin SO-DIMM slot; single-channel DDR3L-1333/1600, 1.35 V; up to 8 GB.
Graphics / Display	Integrated Intel® HD Graphics; 1 x VGA, 1 x HDMI, and 1 x LVDS or optional eDP interface; synchronous/asynchronous display supported.
Ethernet	Up to 2 x Realtek RTL8111H Gigabit Ethernet controllers; single-LAN option; Wake-on-LAN and PXE support.
Storage	1 x SATA 2.0 connector; 1 x full-size mSATA slot.
Audio	Onboard ALC662 6-channel HD audio; MIC/Line-out; dual-channel amplifier output, 5 W per channel at 2 ohms.
Expansion	1 x optional PCI slot; 1 x Mini PCIe slot supporting half-size/full-size Wi-Fi and 4G modules.
USB	Up to 8 x USB 2.0 ports.
Serial Ports	Up to 10 x RS232 ports. COM2-COM5 can support RS485; up to 4 x RS485 supported. COM2 can optionally support RS422 with hardware modification.
Legacy I/O	1 x LPT; 1 x PS/2 keyboard/mouse interface.
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; AT/ATX power-mode selection.
Dimensions	170 mm x 170 mm.
Environment	Detailed specification: Operating -10°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 VGA display port.
USB	4 x USB 2.0 ports.
LAN	Up to 2 x RJ45 Gigabit Ethernet ports.
Serial / Legacy	1 x COM port; 1 x LPT port; 1 x standard keyboard/mouse port.
Audio / Power	1 x Line-out (green); 1 x Mic-in (red); 1 x 12 V DC input.

4.2 Internal I/O and Headers

Interface / Header	Description
HDMI	1 x JHDMI 2 x 8-pin header.
VGA	1 x 1 x 12-pin JVGA header sharing signals with the DB15 VGA port.
LVDS / eDP	1 x 2 x 15-pin LVDS header plus optional 2 x 15-pin eDP header; LVDS and eDP are mutually exclusive.
Backlight	1 x 6-pin LCD backlight power connector.
USB 2.0	2 x 2 x 5-pin USB 2.0 headers providing 4 onboard USB 2.0 ports.
Serial	1 x standard COM header plus 2 x 2 x 20-pin four-port serial headers, supporting up to 9 onboard COM ports.
RS485 / RS422	2 x 2 x 3-pin RS485 headers; supports up to 4 x RS485 or 2 x RS485 + 1 x RS422.
PS/2	1 x 1 x 6-pin keyboard/mouse connector.
Audio	1 x front-audio header; 1 x 4-pin amplified speaker output header.
Power / Panel	1 x 4-pin ATX power connector; 1 x drive-power connector; 1 x 2 x 5-pin front-panel header.
Fan / GPIO	1 x reserved 4-pin CPU fan header; 1 x GPIO header.

5. Display Support

ITX18P supports VGA, HDMI, and either LVDS or eDP display output. The LVDS interface supports dual-channel 24-bit output, while eDP is optional. The source manual also provides selectable 3.3 V / 5 V / 12 V panel operating voltage and 5 V / 12 V backlight power.

Item	Description
Integrated Graphics	Intel® HD Graphics.
VGA	1 x VGA output; internal JVGA header shares the same signals.
HDMI	1 x HDMI interface via JHDMI header.
LVDS	1 x dual-channel 24-bit LVDS interface.
eDP	1 x optional eDP interface; mutually exclusive with LVDS.
Panel Power	Selectable 3.3 V / 5 V / 12 V panel voltage; 5 V / 12 V backlight power.

6. Serial Port Configuration

Port / Source	Default / Optional Function
COM1	Rear RS232 port; Pin 9 supports selectable RI / 5 V / 12 V.
COM2	RS232 default; supports RS485 by jumper; optional RS422 requires hardware modification; Pin 9 supports selectable RI / 5 V / 12 V.
COM3	RS232 default; supports RS485 by jumper.
COM4-COM5	RS232 default; optional RS485 by jumper.
COM6-COM10	RS232 through the two 2 x 20-pin serial headers.
Differential Serial	Supports either 4 x RS485 or 2 x RS485 + 1 x RS422 depending on configuration.

7. Power, Cooling and Reliability Functions

Item	Description
Main Power	12 V DC input.
AT / ATX Mode	AT-ATX1 jumper selects automatic power-on behavior.
Cooling	Fanless thermal design; 1 x reserved 4-pin CPU fan header.
Watchdog	Hardware watchdog timer, 256 levels (0-255 seconds).
Clear CMOS	JBAT1 1 x 3-pin Clear CMOS jumper.
LVDS Enable	LVDS_EN1 jumper controls LVDS enable / disable.
Panel Power	Selectable LVDS/eDP panel and backlight power settings.

8. Mechanical and Environmental Information

Item	Description
Form Factor	Mini-ITX industrial motherboard.
Dimensions	170 mm x 170 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.
Cooling	Fanless-capable design with reserved CPU fan header.

9. Ordering Information

Model	Description
ITX18P-L2AP VER1.1	Intel® Celeron® J1900; 4 cores; 2.0 GHz; DDR3L; HDMI + VGA + LVDS; 1 PCI; 2 LAN; 8 USB; PS/2; LPT; 10 RS232 / 4 RS485; 12 V DC.
Serial Option	COM2 can optionally support RS422; exact RS485/RS422 allocation depends on jumper and hardware configuration.
LAN Option	Single-LAN configuration optional.
Display Option	LVDS and eDP are mutually exclusive; eDP is optional.
Expansion	Mini PCIe for Wi-Fi/4G; PCI slot is listed as optional in the detailed specifications.

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 Product Description states a wide operating temperature range of -20°C to 60°C, while the detailed motherboard specification lists -10°C to 60°C. This datasheet retains the detailed specification in the main table and recommends confirming the required temperature range before ordering.
- The source manual describes a 10-RS232 / 4-RS485 ordering configuration, while the detailed I/O section separates one rear COM port and nine onboard COM ports. RS485/RS422 availability depends on jumper settings and hardware configuration; confirm the selected serial configuration before ordering.

11. Contact Information

Company	CoreIPC
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Disclaimer: This datasheet was compiled from ITX18P 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.