

CoreIPC

ITX70M

Mini-ITX Industrial Motherboard Datasheet

Intel® Sandy Bridge / Ivy Bridge-M Platform

Document	Datasheet
Model	ITX70M
Issue	1.2
Product Type	Mini-ITX Industrial Motherboard
Website	www.CoreIPC.com

This datasheet is prepared based on ITX70M User Manual Issue 1.2.

1. Product Overview

The ITX70M is a CoreIPC Mini-ITX industrial motherboard supporting Intel® PGA988 2nd/3rd Generation Sandy Bridge and Ivy Bridge Celeron®, Pentium®, and Core™ i3/i5/i7 processors. It provides VGA, HDMI and LVDS display outputs, up to dual Gigabit LAN, SATA/mSATA storage, Mini PCIe expansion, multiple USB and serial interfaces, legacy LPT/PS2, and 12 V DC input for industrial and embedded applications.

2. Key Features

- Supports Intel® PGA988 Sandy Bridge / Ivy Bridge 2nd/3rd Generation Celeron®, Pentium®, and Core™ i3/i5/i7 processors.
- 1 x DDR3 SO-DIMM slot supporting single-channel DDR3-1333/1600 memory, up to 8 GB.
- VGA, HDMI and LVDS display interfaces with integrated Intel® HD Graphics 4000.
- 1 x Realtek RTL8111H Gigabit Ethernet; dual-LAN configuration optional with Wake-on-LAN and PXE support.
- Storage includes 1 x SATA 2.0 connector and 1 x full-size mSATA 3.0 slot.
- 1 x Mini PCIe slot supporting half-size/full-size Wi-Fi or 4G modules; optional PCI expansion slot.
- 2 x USB 3.0 plus 4-6 x USB 2.0 depending on single-LAN or dual-LAN configuration.
- 6 x COM ports; COM2 and COM3 support RS485 by default; COM2 can optionally support RS422; COM1/COM2 Pin 9 supports selectable RI/5V/12V.
- LPT, PS/2, GPIO, hardware watchdog, amplified audio output, CPU/system fan headers and AT/ATX power mode selection.
- Mini-ITX 170 x 170 mm; 12 V DC input; operating temperature -10°C to 60°C.

3. Technical Specifications

Category	Specification
Processor	Intel® PGA988 Sandy Bridge / Ivy Bridge 2nd/3rd Generation Celeron®, Pentium®, and Core™ i3/i5/i7 processors.
Chipset	Intel® HM77 / HM76 high-speed chipset.
Memory	1 x SO-DIMM slot; single-channel DDR3-1333/1600; up to 8 GB.
Graphics / Display	Integrated Intel® HD Graphics 4000; 1 x VGA, 1 x HDMI, 1 x LVDS; supports synchronous/asynchronous dual-display output.
Ethernet	1 x Realtek RTL8111H Gigabit Ethernet controller; optional dual LAN; Wake-on-LAN and PXE support.
Storage	1 x SATA 2.0 connector; 1 x full-size mSATA 3.0 slot.
Audio	Onboard ALC897 7.1-channel HD audio; MIC, Line-out and 2 ohm / 5 W stereo amplified output.
Expansion	1 x Mini PCIe slot for half/full-size Wi-Fi or 4G modules; 1 x optional PCI slot.
USB	2 x USB 3.0; total USB count depends on LAN configuration. Dual-LAN version supports 6 USB ports; single-LAN version supports 8 USB ports.
Serial Ports	6 x COM ports. COM2/COM3 support RS485 by default; COM2 optional RS422; COM1/COM2 Pin 9 supports selectable RI/5V/12V.
Legacy I/O	1 x LPT header; 1 x PS/2 keyboard/mouse header.
GPIO	4-channel GPIO input/output.
BIOS	32 Mb Flash ROM.
Watchdog	Hardware reset watchdog, 256 levels (0-255 seconds).
OS Support	Windows XP / Windows 7 / Windows 10 / Linux.
Power	12 V DC input.
Dimensions	170 mm x 170 mm.
Environment	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 HDMI; 1 x VGA.
USB	2 x USB 3.0; 2 x USB 2.0 in single-LAN configuration. The additional RJ45 and 2 x USB 2.0 are mutually exclusive.
LAN	1 x RJ45 Gigabit Ethernet standard; second RJ45 optional.
Audio	1 x Line-out (green); 1 x MIC input (red).
Power	1 x 12 V DC input.

4.2 Internal I/O and Headers

Interface / Header	Description
VGA	1 x JVGA 1 x 12-pin header sharing signals with the DB15 VGA port.
LVDS	1 x 2 x 15-pin dual-channel 24-bit LVDS header; selectable 3.3 V / 5 V / 12 V panel power.
Backlight	1 x 6-pin panel backlight power connector; selectable 5 V / 12 V.
USB 2.0	2 x 2 x 5-pin USB 2.0 headers providing up to 4 ports.
Serial	2 x standard COM headers plus 1 x 2 x 20-pin four-port serial header for COM3-COM6.
RS485 / RS422	1 x 2 x 3-pin JRS485 header; COM2/COM3 support RS485; COM2 can optionally support RS422 with hardware modification.
LPT / PS2	1 x 2 x 13-pin LPT header; 1 x 1 x 6-pin PS/2 keyboard/mouse header.
Audio	1 x front-audio header; 1 x 4-pin amplified audio output header.
Power / Panel	1 x drive power connector; 1 x 4-pin ATX power connector; 1 x 2 x 5-pin front-panel header.
Fan / GPIO	1 x CPU fan header; 1 x system fan header; 1 x 2 x 5-pin GPIO header.

5. Display Support

ITX70M provides VGA, HDMI and LVDS display outputs. The detailed specification lists integrated Intel® HD Graphics 4000 and supports synchronous or asynchronous dual-display operation using VGA, HDMI and LVDS. The LVDS interface supports dual-channel 24-bit output with selectable 3.3 V / 5 V / 12 V panel power.

Item	Description
Integrated Graphics	Intel® HD Graphics 4000.
VGA	1 x VGA output.
HDMI	1 x HDMI output.
LVDS	1 x dual-channel 24-bit LVDS interface.
Multi-display	Supports synchronous or asynchronous dual-display output using VGA, HDMI and LVDS.

6. Serial Port Configuration

Port / Source	Default / Optional Function
COM1	RS232; Pin 9 selectable between RI, +5 V and +12 V.
COM2	RS232 default; RS485 supported; optional RS422 requires hardware modification; Pin 9 selectable RI/+5 V/+12 V.
COM3	RS232 default; RS485 supported via JRS485 header.
COM4-COM6	RS232 through the 2 x 20-pin four-port serial header.
JRS485	2 x RS485 channels available for COM2 and COM3; COM2 optional RS422.

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.
CPU Fan	1 x 4-pin CPU fan header.
System Fan	1 x 4-pin system fan header.
Watchdog	Hardware reset watchdog, 256 levels (0-255 seconds).
Clear CMOS	JBAT1 1 x 3-pin Clear CMOS jumper.

8. Mechanical and Environmental Information

Item	Description
Product Type	Mini-ITX industrial motherboard.
Dimensions	170 mm x 170 mm.
Operating Temperature	-10°C to 60°C.
Storage Temperature	-20°C to 70°C.
Operating Humidity	5%-95% relative humidity, non-condensing.
Power Input	12 V DC.

9. Ordering Information

Model	Description
ITX70M-L12 VER1.2	HM76; DDR3L; HDMI + VGA + LVDS; 1 LAN; 8 USB; 2 COM / 1 RS485; 12 V DC.
ITX70M-L16 VER1.2	HM76; DDR3L; HDMI + VGA + LVDS; 1 LAN; 8 USB; 6 COM / 2 RS485; 12 V DC.
ITX70M-L26 VER1.2	HM76; DDR3L; HDMI + VGA + LVDS; 2 LAN; 6 USB; 6 COM / 2 RS485; 12 V DC.
Optional Expansion	PCI expansion slot optional.
Wireless	Mini PCIe supports Wi-Fi/4G.

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 terminology varies slightly in the source manual: Ordering Information specifies DDR3L, while the detailed specification lists DDR3-1333/1600. Confirm the required memory type with the selected production configuration.
- Platform/component references vary by section: Ordering Information lists HM76, while the detailed specification lists HM77/HM76; the block diagram labels ALC662 audio, while the detailed specification lists ALC897. Confirm the production BOM before order placement.

11. Contact Information

Company	CoreIPC
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Disclaimer: This datasheet was compiled from ITX70M 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.