

CoreIPC

ITX37U

Mini-ITX Industrial Motherboard Datasheet

Intel® Sandy Bridge-U / Ivy Bridge-U Platform

Document	Datasheet
Model	ITX37U
Issue	1.1
Product Type	Mini-ITX Industrial Motherboard
Website	www.CoreIPC.com

This datasheet is prepared based on ITX37U User Manual Issue 1.1.

1. Product Overview

The ITX37U is a CoreIPC Mini-ITX industrial motherboard supporting Intel® Sandy Bridge-U and Ivy Bridge-U processors. It combines DDR3 memory, VGA/HDMI/LVDS/eDP display interfaces, up to dual Gigabit Ethernet, SATA and mSATA storage, Mini PCIe and optional PCI expansion, multiple USB and serial interfaces, LPT, PS/2, GPIO, and 12 V DC input for commercial displays, machine vision, medical instruments, industrial control, financial equipment, cloud terminals, and other applications.

2. Key Features

- Supports Intel® Sandy Bridge-U / Ivy Bridge-U 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, LVDS, and eDP display interfaces with integrated Intel® HD Graphics 4000.
- 1 x Realtek RTL8111H Gigabit Ethernet standard; dual-LAN configuration optional with Wake-on-LAN and PXE support.
- Storage includes 2 x SATA 2.0 connectors 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.
- Supports 10 USB ports on single-LAN configurations or 8 USB ports on dual-LAN configurations, including 2 x USB 3.0.
- Provides up to 6 x RS232 serial ports; COM1/COM2 support RS485, COM1 optionally supports RS422, and 2-COM / 6-COM variants provide 1 / 2 RS485 by default.
- LPT, PS/2, GPIO, amplified audio output, hardware watchdog, 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® Sandy Bridge-U / Ivy Bridge-U processors. Source examples: Core™ i3-3217U, Core™ i5-3317U, Core™ i5-3337U; compatible with Celeron®, Pentium®, and Core™ i3/i5/i7.
Chipset	Intel® HM65 / HM76 / HM77 chipset; HM77 supports RAID.
Memory	1 x 204-pin SO-DIMM; 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, and 1 x eDP interface.
Ethernet	1 x Realtek RTL8111H Gigabit Ethernet standard; dual-LAN option; Wake-on-LAN and PXE support.
Storage	2 x SATA 2.0 connectors; 1 x full-size mSATA 3.0 slot. RAID supported with HM77.
Audio	Realtek ALC897 7.1-channel HD audio; Mic-in, Line-out, and 2 x 5 W stereo amplifier output at 2 ohms.
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 plus USB 2.0 interfaces. Ordering variants provide 10 USB with single LAN or 8 USB with dual LAN.
Serial Ports	Up to 6 x RS232. COM1/COM2 support RS485; COM1 optionally supports RS422. 2-COM model: 1 RS485; 6-COM model: 2 RS485 by default.
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 watchdog timer, 256 levels (0-255 seconds).
OS Support	Windows XP / Windows 7 / Windows 10 / Linux.
Power	12 V DC input; AT/ATX power-mode selection.
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 plus 2 x USB 2.0 on the rear layout; the rear USB 2.0 pair is mutually exclusive with LAN2.
LAN	1 x RJ45 Gigabit Ethernet standard; second RJ45 optional and mutually exclusive with two rear USB 2.0 ports.
Audio	1 x Line-out (green); 1 x Mic-in (red).
Power	1 x 12 V DC input connector.

4.2 Internal I/O and Headers

Interface / Header	Description
HDMI	1 x JHDMI 2 x 8-pin header sharing signals with the standard HDMI port.
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.
eDP	1 x 2 x 15-pin eDP header.
Backlight	1 x 6-pin display backlight power connector; selectable 5 V / 12 V.
USB 2.0	3 x 2 x 5-pin USB 2.0 headers providing up to 6 internal USB 2.0 ports.
Serial	2 x standard COM headers plus 1 x 2 x 20-pin four-port header for COM3-COM6.
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 speaker output header.
Power / Panel	1 x HDD 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 GPIO header.

5. Display Support

ITX37U provides VGA, HDMI, LVDS, and eDP display interfaces. The detailed specification lists integrated Intel® HD Graphics 4000 and supports synchronous or asynchronous display output through VGA, HDMI, LVDS, and eDP. LVDS provides dual-channel 24-bit output; both LVDS and eDP support selectable 3.3 V / 5 V / 12 V panel power and 5 V / 12 V backlight 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.
eDP	1 x eDP interface.
Multi-display	Supports synchronous or asynchronous output through VGA, HDMI, LVDS, and eDP.

6. Serial Port Configuration

Port / Source	Default / Optional Function
COM1	RS232 by default; supports RS485; optional RS422 requires hardware modification; Pin 9 supports RI / +5 V / +12 V selection.
COM2	RS232 by default; supports RS485; Pin 9 supports RI / +5 V / +12 V selection.
COM3-COM6	RS232 through the 2 x 20-pin four-port serial header.
2-COM Version	1 x RS485 supported by default.
6-COM Version	2 x RS485 supported by default.

7. Power, Cooling and Reliability Functions

Item	Description
Main Power	12 V DC input.

Item	Description
AT / ATX Mode	AT-ATX1 jumper selects automatic power-on behavior.
Cooling	1 x 4-pin CPU fan header and 1 x 4-pin system fan header.
Watchdog	Hardware watchdog timer, 256 levels (0-255 seconds).
Clear CMOS	JBAT1 1 x 3-pin Clear CMOS jumper.
Display Power	LVDS/eDP panel operating voltage selectable 3.3 V / 5 V / 12 V; backlight power selectable 5 V / 12 V.

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.
Storage Temperature	-20°C to 70°C.
Operating Humidity	5%-95% RH, non-condensing.
Power Input	12 V DC.

9. Ordering Information

Model	Description
ITX37U-L12-3217U VER1.1	Core™ i3-3217U; 2 cores; 1.8 GHz; DDR3; eDP + HDMI + VGA + LVDS; 1 LAN; 10 USB; PS/2; LPT; 2 COM / 1 RS485; 12 V.
ITX37U-L12-3317U VER1.1	Core™ i5-3317U; 2 cores; 1.7 GHz; DDR3; eDP + HDMI + VGA + LVDS; 1 LAN; 10 USB; PS/2; LPT; 2 COM / 1 RS485; 12 V.
ITX37U-L26-3317U VER1.1	Core™ i5-3317U; 2 cores; 1.7 GHz; DDR3; eDP + HDMI + VGA + LVDS; 2 LAN; 8 USB; PS/2; LPT; 6 COM / 2 RS485; 12 V.
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.
- The motherboard block diagram identifies the audio codec as ALC662, while the detailed motherboard specification lists ALC897. This datasheet follows the detailed specification and recommends confirming the production BOM before ordering.
- USB and LAN population varies by configuration: the single-LAN L12 variants are listed with 10 USB ports, while the dual-LAN L26 variant is listed with 8 USB ports. The source manual also states that LAN2 and two rear USB 2.0 ports are mutually exclusive. Confirm the selected I/O configuration before ordering.

11. Contact Information

Company	CoreIPC
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Disclaimer: This datasheet was compiled from ITX37U User Manual Issue 1.1. 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.