

CoreIPC

ITX110U VER1.1

Mini-ITX Industrial Motherboard Datasheet

Intel® Tiger Lake-U Platform | Industrial Embedded Motherboard

Document	Datasheet
Model	ITX110U VER1.1
Issue	1.1
Product Type	Mini-ITX Industrial Motherboard
Website	www.CoreIPC.com

This datasheet is prepared based on ITX110U User Manual Issue 1.1.

1. Product Overview

The ITX110U VER1.1 is a 170 x 170 mm Mini-ITX industrial motherboard based on the Intel® Tiger Lake-U platform. It supports low-power Intel® Celeron, Pentium and Core i3/i5/i7 processors and is designed for digital signage, communication control, medical instruments, industrial control, financial equipment, cloud terminals and other embedded industrial applications.

2. Key Features

- Intel® Tiger Lake-U Celeron, Pentium and Core i3/i5/i7 low-power processor support.
- Two 260-pin DDR4 SO-DIMM slots, dual-channel DDR4-3200, up to 64 GB.
- VGA, HDMI 2.0b, LVDS/eDP and eDP display interfaces; supports synchronous/asynchronous multi-display output.
- Up to two Intel® I226V 2.5GbE ports with Wake-on-LAN and PXE support; single-LAN option available.
- One SATA 3.0 port, one M.2 Key-M 2280/2242 NVMe slot, and Mini-PCIe support for mSATA/4G configurations.
- One M.2 Key-E interface for Wi-Fi; Bluetooth support is available depending on configuration.
- Up to nine USB interfaces, including rear USB 3.1 and internal USB 2.0.
- Six COM ports; COM1/COM2 support RS232 or RS485, while COM3/COM4 can be hardware-adjusted for additional RS485/RS422 functions.
- Onboard ALC897 7.1-channel HD audio with MIC/Line-out and 2 ohm, 5 W stereo amplifier support.
- Mini-ITX 170 x 170 mm form factor; operating temperature -10°C to 60°C.

3. Technical Specifications

Category	Specification
CPU	Supports Intel® Tiger Lake-U Celeron, Pentium and Core i3/i5/i7 low-power processors. Source examples include Intel® Celeron 6305E (dual-core, 1.8 GHz) and Core i5-1135G7 (quad-core, 2.4 GHz, up to 4.2 GHz).
Platform	Intel® Tiger Lake-U platform.
Memory	2 x 260-pin DDR4 SO-DIMM slots; dual-channel DDR4-3200; maximum capacity 64 GB.
Graphics / Display	Integrated Intel® UHD Graphics; DirectX 12.1 and OpenGL 4.6 support. 1 x VGA, 1 x HDMI 2.0b, 1 x LVDS or eDP, plus 1 x eDP. HDMI supports 4K at 60 Hz. Supports synchronous/asynchronous multi-display output.
Ethernet	Up to 2 x Intel® I226V 2.5GbE ports; single-LAN option available; supports Wake-on-LAN and PXE.
Storage	1 x SATA 3.0 port; 1 x Mini-PCIe slot supporting mSATA and 4G by default (Wi-Fi options available); 1 x M.2 Key-M 2280/2242 slot supporting NVMe only.
Audio	Onboard Realtek ALC897 7.1-channel HD audio; MIC/Line-out; amplifier support for 2 ohm, 5 W stereo.
Expansion	1 x Mini-PCIe slot; 1 x M.2 Key-E interface for Wi-Fi, with Bluetooth/Wi-Fi options depending on configuration.
USB	Up to 9 USB interfaces. Rear I/O provides 2 x USB 3.1 by default; internal USB 2.0 availability varies by single/dual-LAN configuration.
Serial Ports	6 x COM ports. COM1-COM6 support RS232 by default; COM1/COM2 can support RS485; COM3 can be hardware-adjusted for RS485/RS422; COM4 can be hardware-adjusted for RS485.
GPIO	4-channel input/output GPIO.
BIOS	128 Mb Flash ROM.
TPM	2 x 6-pin TPM 2.0 interface.
Watchdog	Hardware reset function, 256 levels, 0-255 seconds.
Operating System	Windows 10 / Windows 11 / Linux.
Power Input	Detailed specifications list DC 12 V power input. The source ordering/product-introduction pages also reference 12-19 V support; confirm the selected model before release.
Operating Temperature	-10°C to 60°C.
Storage Temperature	-20°C to 70°C.
Operating Humidity	5%-95% relative humidity, non-condensing.
Dimensions	170 mm x 170 mm.

4. I/O Interface Summary

4.1 Rear Panel I/O

Interface	Description
Display	1 x HDMI 2.0b display port, supports 4K at 60 Hz; 1 x VGA display port. Optional dual-HDMI configuration is referenced in the source manual.
USB	2 x USB 3.1 ports by default. Single-LAN configuration may support 4 x USB 3.1; dual-LAN configuration uses 2 x USB 3.1.
LAN	Up to 2 x RJ-45 Ethernet ports based on Intel® I226V 2.5GbE controllers; single-LAN option available.
Audio	1 x Line-out jack (green), 1 x MIC jack (red).
Optional Controls	Optional Clear CMOS switch and optional power-on boot DIP switch.
USB 2.0 Option	Optional 2 x rear USB 2.0 ports; default function may be routed to F_USB1 header depending on configuration.
Power	1 x DC power input connector.

4.2 Internal I/O and Headers

Interface / Header	Description
JVGA	1 x 12-pin internal VGA header, same signal as the DB15 VGA interface.
LVDS / eDP	1 x 2 x 15-pin LVDS interface, dual-channel 24-bit; default LVDS and hardware-adjustable to eDP1.
eDP	1 x 2 x 15-pin eDP interface; dual-eDP support requires hardware adjustment.
Backlight Power	1 x 6-pin panel backlight power connector.
USB 2.0	Internal USB 2.0 headers provide up to 7 USB 2.0 ports for dual-LAN configuration or 5 for single-LAN configuration.
Front Audio	1 x 2 x 5-pin front audio header.
Amplifier	1 x 4-pin amplifier connector.
COM Ports	6 x COM ports: COM1/COM2 on standard 2 x 5-pin headers; COM3-COM6 on a 2 x 20-pin header.
LPT	1 x 2 x 13-pin parallel-port header.
TPM	1 x 2 x 6-pin TPM 2.0 header.
SATA Power	1 x 4-pin SATA hard-drive power connector.
ATX Power	1 x 4-pin ATX power connector.
Front Panel	1 x 2 x 5-pin front-panel header for power switch, reset switch, HDD LED and power LED.
Fan	1 x 4-pin CPU smart-fan header and 1 x 4-pin system smart-fan header.
GPIO	1 x 2 x 5-pin GPIO header with 4 GPI and 4 GPO signals.

5. Display and LVDS / eDP Support

The ITX110U provides VGA, HDMI 2.0b, LVDS/eDP and eDP display interfaces. The source manual states support for synchronous/asynchronous multi-display operation. LVDS and eDP functions, panel voltage and backlight voltage are configurable through hardware settings; verify the required panel interface before ordering.

Item	Description
External Display	1 x VGA and 1 x HDMI 2.0b; HDMI supports 4K at 60 Hz. Optional dual-HDMI configuration is referenced in the source manual.
Internal LVDS	1 x 2 x 15-pin LVDS header, dual-channel 24-bit; default LVDS and hardware-adjustable to eDP.
Internal eDP	1 x 2 x 15-pin eDP header; dual-eDP support requires hardware adjustment.
Panel Voltage	LCD panel voltage options: 3.3 V, 5 V and 12 V; default 3.3 V.
Backlight Power	Backlight power options: 12 V or 5 V; default 12 V.
LVDS Settings	LVDS enable, PWM polarity and resolution are configurable by jumpers/DIP switch. The source manual lists multiple resolutions up to 1920 x 1080.

6. Serial Port Configuration

Port	Default / Optional Function
COM1	RS232 by default; supports RS485 by jumper setting. RS485 uses COM1 pin 1 = A and pin 2 = B.
COM2	RS232 by default; supports RS485 by jumper setting. RS485 uses COM2 pin 1 = A and pin 2 = B.
COM3	RS232 by default; hardware-adjustable to RS485 or RS422. RS485/RS422 signals are routed through JRS485.
COM4	RS232 by default; hardware-adjustable to RS485. RS485 signals are routed through JRS485.
COM5-COM6	RS232 by default.
Configuration Note	COM3/COM4 RS485/RS422 functions require hardware adjustment; contact CoreIPC before ordering if these functions are required.

7. Power, Cooling and Reliability Functions

Item	Description
Power Input	Detailed specifications list DC 12 V. The ordering/product-introduction sections also reference 12-19 V; confirm the selected model/configuration.
AT / ATX Mode	Supports AT and ATX mode switching through the AT-ATX1 jumper.
CPU / System Fan	1 x 4-pin CPU smart-fan interface and 1 x 4-pin system smart-fan interface.
Watchdog	Supports hardware reset, 256 levels, 0-255 seconds.
CMOS Clear	JBAT1 1 x 3-pin Clear CMOS jumper; optional rear-panel Clear CMOS switch is listed in the source manual.
TPM	2 x 6-pin TPM 2.0 interface.

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% relative humidity, non-condensing.
Installation Notes	Use ESD protection and power off the system before installation, removal or reconfiguration.

9. Ordering Information

Model	Description
ITX110U-L16-1135G7 VER1.1	Core i5-1135G7, 4 cores, 2.4 GHz; 2 x DDR4; 1 x LAN; 9 x USB; 6 x COM; source ordering table lists 12-19 V.
ITX110U-L26-1165G7 VER1.1	Core i7-1165G7, 4 cores, 2.8 GHz; 2 x DDR4; 2 x LAN; 9 x USB; 6 x COM; source ordering table lists 12-19 V.
ITX110U-L26-1135G7 VER1.1	Core i5-1135G7, 4 cores, 2.4 GHz; 2 x DDR4; 2 x LAN; 9 x USB; 6 x COM; source ordering table lists 12-19 V.
Options	Single/dual LAN, dual-HDMI option, LVDS/eDP configuration and RS485/RS422 functions depend on model/project requirements.

10. Compliance and Documentation Notes

- Certification and compliance information is not specified in the source manual. Contact CoreIPC for CE, RoHS, EMC or project-specific documents.
- The source manual lists 12-19 V in Ordering Information/Product Introduction but DC 12 V in Detailed Specifications/Back-panel I/O. Confirm the final input range for the selected model before release.
- Product images and I/O layouts may vary by configuration. Verify the exact model/VER1.1 label before BIOS, driver or technical-document use.

11. Contact Information

Company	CoreIPC
Sales Team	CoreIPC Sales Team
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Website	https://www.coreipc.com/

Disclaimer: This datasheet was compiled from ITX110U User Manual Issue 1.1. Product specifications and available configurations should be confirmed against the selected model before order placement. All product names, trademarks and registered trademarks are the property of their respective owners.