

CoreIPC

RUT60R

Mini-ITX 4-LAN Industrial Router Motherboard Datasheet

Intel® Elkhart Lake Platform

Document	Datasheet
Model	RUT60R
Issue	1.1
Product Type	Mini-ITX 4-LAN Industrial Router Motherboard
Website	www.CoreIPC.com

This datasheet is prepared based on RUT60R User Manual Issue 1.1.

1. Product Overview

The RUT60R is a CorelPC Mini-ITX multi-LAN industrial motherboard based on the Intel® Elkhart Lake platform. It integrates an Intel® Celeron® J6412 quad-core processor, DDR4 memory, four Intel® 2.5GbE LAN ports, optional bypass, VGA with optional HDMI display, mSATA/SATA storage, Mini PCIe and M.2 Key B wireless expansion, serial interfaces, TPM 2.0, GPIO, and 12 V DC input. It is designed for software routers, network security systems, industrial automation, cloud terminals, and related embedded networking applications.

2. Key Features

- Integrated Intel® Celeron® J6412 quad-core processor, 2.0 GHz, 10 W TDP; compatible with Intel® Elkhart Lake processors.
- 1 x DDR4 SO-DIMM slot supporting single-channel DDR4-3200 memory, up to 32 GB.
- 4 x Intel® I225 or I226 2.5GbE Ethernet ports; optional 2 x bypass groups; Wake-on-LAN and PXE support.
- VGA display support with optional HDMI output; HDMI supports up to 4K @ 60 Hz.
- Storage options include SATA 3.0, optional 2.5-inch SATA, and full-size mSATA; mutually exclusive configurations apply as specified in the source manual.
- 1 x Mini PCIe slot for Wi-Fi/4G and 1 x M.2 Key B 3052 slot for 5G modules.
- 2 x USB 3.1 plus 4 x USB 2.0 supported; exact USB connector population depends on configuration.
- 1 x Cisco-compatible RS232 console port; optional COM2 header and optional 2 x RS485 channels are available according to configuration.
- Rear-mounted CPU with fanless thermal design; TPM 2.0 header, 4-channel GPIO, hardware watchdog, and reserved fan header.
- Mini-ITX 170 x 170 mm; 12 V DC input; operating temperature -10°C to 60°C.

3. Technical Specifications

Category	Specification
Processor	Integrated Intel® Celeron® J6412 quad-core processor, 2.0 GHz, 10 W TDP; compatible with Intel® Elkhart Lake processors.
Memory	1 x 260-pin SO-DIMM; single-channel DDR4-3200; up to 32 GB.
Graphics / Display	Integrated 10th-generation Intel® UHD Graphics; VGA plus optional HDMI; HDMI supports up to 4K @ 60 Hz.
Ethernet	4 x Intel® I225 or I226 2.5GbE controllers; Wake-on-LAN and PXE support; optional 2 x bypass groups.
Storage	1 x SATA 3.0 connector; optional 2.5-inch SATA interface mutually exclusive with the 7-pin SATA connector; 1 x full-size mSATA slot, with additional mutual-exclusion rules as specified in the source manual.
Expansion	1 x Mini PCIe slot for Wi-Fi/4G; 1 x M.2 Key B 3052 slot for 5G modules.
USB	2 x USB 3.1 plus 4 x USB 2.0 according to Product Description; connector population is configuration-dependent.
Serial Ports	1 x Cisco-compatible RS232 console standard; optional COM header; optional 2 x RS485 channels on COM3/COM4.
TPM	1 x 2 x 6-pin header for external TPM 2.0 module.
GPIO	4-channel GPIO input/output.
BIOS	128 MB Flash ROM, as specified in the source manual.
Watchdog	Hardware watchdog timer, 256 levels (0-255 seconds).
OS Support	Windows 10 / Windows 11 / Linux.
Power	12 V DC input; AT/ATX power-mode selection; onboard 4-pin ATX connector can be configured as 12 V input/output.
Operating Temperature	-10°C to 60°C.
Storage Temperature	-20°C to 70°C.
Operating Humidity	5%-95% RH, non-condensing.
Dimensions	170 mm x 170 mm.

4. I/O Interface Summary

4.1 Rear Panel I/O

Interface	Description
LAN	4 x RJ45 2.5GbE ports using Intel® I225/I226 controllers.
USB	2 x standard USB 3.0 ports.
Serial	1 x Cisco-compatible RS232 console port.
Controls / Indicators	1 x power button; 1 x optional Clear CMOS button; 1 x HDD/Power LED.
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.
HDMI	1 x optional HDMI port.
USB 2.0	1 x optional vertical USB 2.0 port; 2 x USB 2.0 via 2 x 5-pin header; optional front USB 2.0 resources are mutually exclusive with selected onboard USB resources.
Serial	1 x optional 2 x 5-pin COM header; 2 x optional 2 x 3-pin RS485 headers for COM3/COM4.
LAN LED	1 x 2 x 8-pin LAN LED header.
Storage Power	1 x HDD power connector; source also defines two SATA power connectors, with only JSPWR1 populated by default.
ATX Power	1 x 4-pin ATX connector configurable as 12 V input or output.
Front Panel	1 x 2 x 5-pin front-panel switch and LED header.
TPM / GPIO	1 x 2 x 6-pin TPM 2.0 header; 1 x 2 x 5-pin GPIO header.
Fan	Rear-mounted CPU with fanless thermal design; reserved fan header(s) defined in the source manual.

5. Display Support

RUT60R provides VGA display through the onboard JVGA interface and an optional HDMI output. The detailed specification lists HDMI support up to 4K at 60 Hz and supports synchronous/asynchronous display through HDMI and VGA.

Item	Description
Integrated Graphics	10th-generation Intel® UHD Graphics.
VGA	VGA output through JVGA header.
HDMI	Optional HDMI output; up to 4K @ 60 Hz.
Multi-display	Supports synchronous/asynchronous display via HDMI and VGA.
Configuration	HDMI is optional according to Product Description and detailed specifications.

6. Serial Port Configuration

Port / Source	Default / Optional Function
COM1 Console	1 x Cisco-compatible RS232 console port; standard.
COM2 Header	1 x optional standard 2 x 5-pin COM header.
COM3 / COM4	Optional RS485 through 2 x 3-pin RS485 header; source states COM3 and COM4 support RS485.
Ordering Table	Lists 1 COM / 0 RS485 for RUT60R VER1.1.
Note	Product Description states 2 x RS232 with optional 2 x RS485; confirm selected production 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; source shows auto power-on enabled by default.
ATX Connector	1 x 4-pin connector configurable as 12 V input or output.
Cooling	Rear-mounted CPU with fanless thermal design; reserved fan connector(s).
Watchdog	Hardware watchdog timer, 256 levels (0-255 seconds).
Clear CMOS	JBAT1 Clear CMOS jumper; optional external Clear CMOS button.

8. Mechanical and Environmental Information

Item	Description
Product Type	Mini-ITX multi-LAN industrial router 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
RUT60R VER1.1	Intel® Celeron® J6412; 4 cores; 2.0 GHz; DDR4; VGA; 4 LAN; 5 USB listed in Ordering Information; 1 COM / 0 RS485 listed; 12 V DC.
LAN Option	4 x Intel® I225 or I226 2.5GbE; optional 2 x bypass groups.
Wireless Expansion	Mini PCIe for Wi-Fi/4G; M.2 Key B 3052 for 5G.
Display Option	HDMI optional; VGA standard in source description.
Serial Option	Optional COM header and optional 2 x RS485 channels; confirm required configuration before ordering.

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.
- USB counts vary by section. Product Description states 2 x USB 3.1 plus 4 x USB 2.0, while Ordering Information lists 5 USB. The detailed I/O section shows standard, optional and mutually exclusive USB resources. Confirm the required connector population before ordering.
- Serial-port descriptions also vary by section. Product Description states 2 x RS232 with optional 2 x RS485, while Ordering Information lists 1 COM / 0 RS485. Detailed specifications identify one Cisco-compatible RS232 console port, an optional COM header, and optional RS485 headers for COM3/COM4. Confirm the required serial configuration before ordering.

11. Contact Information

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

Disclaimer: This datasheet was compiled from RUT60R 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.