

CoreIPC

NUC62D

120 x 120 mm Industrial NUC Motherboard Datasheet

Intel® Elkhart Lake Platform

Document	Datasheet
Model	NUC62D
Issue	1.1
Product Type	120 x 120 mm Industrial NUC Motherboard
Website	www.CoreIPC.com

This datasheet is prepared based on NUC62D User Manual Issue 1.1.

1. Product Overview

The NUC62D is a compact 120 x 120 mm CoreIPC NANO-series industrial motherboard supporting Intel® Elkhart Lake processors. It integrates DDR4 memory, VGA/HDMI with optional dual-HDMI display, up to dual Gigabit Ethernet, SATA and M.2 storage, Mini PCIe expansion, multiple USB and serial interfaces, fanless cooling, and 12 V DC input for commercial displays, mini PCs, medical instruments, industrial control, financial equipment, cloud terminals, and other embedded applications.

2. Key Features

- Integrated Intel® Celeron® J6412 2.0 GHz quad-core processor; compatible with the Intel® Elkhart Lake processor family.
- 1 x DDR4 SO-DIMM slot supporting DDR4-3200 memory, up to 32 GB.
- 1 x VGA and 1 x HDMI display output; optional dual-HDMI configuration; synchronous or independent dual display supported.
- Up to 2 x Realtek RTL8111H Gigabit Ethernet ports with Wake-on-LAN and PXE; single-LAN option available.
- Storage includes 1 x SATA 3.0 connector and 1 x M.2 Key M 2280/2242 slot supporting PCIe/SATA auto-detect SSDs.
- 1 x Mini PCIe slot supports half-size/full-size Wi-Fi or 4G modules.
- Supports 4 x USB 3.2 Gen 1 and up to 5 x USB 2.0 ports according to the source manual.
- 2 x DB9 RS232 ports are standard; COM1 and COM2 can optionally be configured as RS485. Up to 4 serial ports require hardware modification.
- Onboard Realtek ALC897 7.1-channel HD audio supports microphone input and line-out.
- 120 x 120 mm form factor; 12 V DC input; fanless cooling; detailed specification 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; DDR4-3200; up to 32 GB.
Graphics / Display	Integrated Intel® UHD Graphics; 1 x VGA + 1 x HDMI 2.0 up to 4K @ 60 Hz; optional stacked dual HDMI; synchronous/independent dual display.
Ethernet	Up to 2 x Realtek RTL8111H Gigabit Ethernet controllers; single-LAN option; Wake-on-LAN and PXE support.
Storage	1 x SATA 3.0 connector, up to 6 Gbps; 1 x M.2 Key M 2280/2242 slot supporting PCIe/SATA auto-detect SSDs.
Audio	Realtek ALC897 7.1-channel HD audio; microphone input and line-out.
Expansion	1 x Mini PCIe slot supporting half-size/full-size Wi-Fi or 4G modules.
USB	4 x USB 3.2 Gen 1 plus up to 5 x USB 2.0 according to Product Description. Source USB resource descriptions vary by section.
Serial Ports	2 x DB9 RS232 standard; COM1/COM2 can optionally support RS485 via jumper settings; up to 4 serial ports require hardware modification.
BIOS	128 Mb Flash ROM.
Watchdog	Hardware reset watchdog, 256 levels (0-255 seconds).
OS Support	Windows 10 / Windows 11 / Linux.
Power	12 V DC input; AT/ATX power-mode selection.
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.
Dimensions	120 mm x 120 mm.

4. I/O Interface Summary

4.1 Rear Panel I/O

Interface	Description
Display	1 x HDMI 2.0; 1 x VGA. Optional stacked dual-HDMI configuration.
USB	Front: 4 x USB 3.2 Gen 1; rear: 2 x USB 2.0.
LAN	Up to 2 x RJ45 Gigabit Ethernet ports; single-LAN option available.
Serial / Audio	2 x DB9 RS232; 1 x combined Line-out / microphone connector.
Controls / Power	1 x HDD activity LED; 1 x illuminated power button; 1 x 12 V DC input.

4.2 Internal I/O and Headers

Interface / Header	Description
USB 2.0	1 x 1 x 4-pin USB 2.0 connector and 1 x 2 x 5-pin USB 2.0 header; availability is configuration-dependent.
Serial	4 x 2 x 5-pin COM headers are defined; 2 serial ports are supported by default; 4-port support requires hardware modification.
Storage Power	1 x 4-pin drive power connector.
DC Power	1 x 4-pin onboard DC power connector.
Front Panel	1 x 2 x 5-pin front-panel switch and LED header.
Fan	1 x reserved 4-pin CPU fan header.

5. Display Support

NUC62D provides VGA and HDMI display outputs and supports synchronous or independent dual-display operation. The detailed specification lists HDMI 2.0 with support up to 4K at 60 Hz. A stacked dual-HDMI configuration is optional according to the source manual.

Item	Description
Integrated Graphics	Intel® UHD Graphics, 10th-generation graphics core.
HDMI	1 x HDMI 2.0 output, up to 4K @ 60 Hz; optional stacked dual-HDMI configuration.
VGA	1 x VGA output.
Multi-display	Supports synchronous or independent dual-display output through VGA and HDMI.

6. Serial Port Configuration

Port	Default / Optional Function
COM1	DB9 RS232 by default; supports optional RS485 through jumper settings.
COM2	DB9 RS232 by default; supports optional RS485 through jumper settings.
JCOM1 / JCOM2	Optional onboard headers sharing the default serial-port resources; not populated by default.
JCOM3 / JCOM4	Optional additional serial ports; 4-port support requires hardware modification.

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	Rear-mounted CPU with fanless thermal design; 1 x reserved 4-pin CPU 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	Industrial NANO-series motherboard.
Dimensions	120 mm x 120 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.

9. Ordering Information

Model	Description
NUC62D VER1.1	Intel® Celeron® J6412; 4 cores; 2.0 GHz; DDR4; HDMI + VGA; 2 LAN; 9 USB; 2 COM / 2 RS485; 12 V DC.
Display Option	Optional stacked dual-HDMI configuration.
LAN Option	Single-LAN configuration available.
Serial Option	Up to 4 serial ports optional with hardware modification.

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.
- Operating-temperature information differs by section: Product Description states -20°C to 60°C, while the detailed Motherboard Specifications table states -10°C to 60°C. This datasheet uses -10°C to 60°C in the main specification table and flags the discrepancy for confirmation.
- USB descriptions vary by section. Product Description states 4 x USB 3.2 Gen 1 plus 5 x USB 2.0; the block diagram labels 4 x USB3.1 and 6 x USB2.0 resources; the detailed specification and pin definitions describe configuration-dependent onboard USB resources. Confirm the required USB/LAN configuration before ordering.

11. Contact Information

Company	CoreIPC
Sales Team	CoreIPC Sales Team
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Disclaimer: This datasheet was compiled from NUC62D 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.