

CoreIPC

NUC19D

120 x 120 mm Industrial NUC Motherboard Datasheet

Intel® Bay Trail Platform

Document	Datasheet
Model	NUC19D
Issue	1.1A
Product Type	120 x 120 mm Industrial NUC Motherboard
Website	www.CoreIPC.com

This datasheet is prepared based on NUC19D User Manual Issue 1.1A.

1. Product Overview

The NUC19D is a compact 120 x 120 mm CoreIPC NANO-series industrial motherboard supporting Intel® Bay Trail processors. It integrates DDR3L memory, VGA/HDMI or optional dual-HDMI display, dual Gigabit Ethernet, SATA and mSATA storage, Mini PCIe expansion, USB and serial connectivity, GPIO, audio, and 12 V DC input for mini PCs, medical equipment, industrial control, financial equipment, cloud terminals, and other embedded applications.

2. Key Features

- Integrated Intel® Celeron® J1900 2.0 GHz quad-core processor; compatible with Intel® Bay Trail-I/M/D processors. N2840 configuration is also listed in Ordering Information.
- 1 x DDR3L SO-DIMM slot supporting single-channel DDR3L-1333/1600, 1.35 V memory, up to 8 GB.
- 1 x VGA + 1 x HDMI, or optional dual-HDMI configuration; supports synchronous/asynchronous dual-display output.
- 2 x Realtek RTL8111H Gigabit Ethernet ports with Wake-on-LAN and PXE boot support.
- Storage includes 1 x SATA 2.0 connector and 1 x full-size mSATA slot.
- 1 x Mini PCIe slot supports half-size/full-size Wi-Fi or 4G modules.
- Supports 1 x USB 3.0 and up to 5 x USB 2.0 ports; one internal USB 2.0 header is unavailable when 4G support is enabled.
- 2 x DB9 RS232 ports are standard; COM1 and COM2 can be configured for RS485 by jumper. Up to 4 serial ports are optional with hardware modification.
- Onboard Realtek ALC897 7.1-channel HD audio with combined Line-out / microphone front audio.
- 120 x 120 mm form factor; 12 V DC input; fanless cooling; operating temperature -20°C to 60°C.

3. Technical Specifications

Category	Specification
Processor	Integrated Intel® Celeron® J1900 quad-core processor, 2.0 GHz, TDP 10 W; compatible with Intel® Bay Trail-I/M/D processors. N2840 option listed in Ordering Information.
Memory	1 x 204-pin SO-DIMM; single-channel DDR3L-1333/1600, 1.35 V; up to 8 GB.
Graphics / Display	Integrated Intel® HD Graphics; 1 x VGA + 1 x HDMI, or optional 2 x HDMI. Synchronous/asynchronous dual-display supported.
Ethernet	2 x Realtek RTL8111H Gigabit Ethernet controllers; Wake-on-LAN and PXE support.
Storage	1 x SATA 2.0 connector; 1 x full-size mSATA slot.
Audio	Realtek ALC897 7.1-channel HD audio supporting microphone input and line output.
Expansion	1 x Mini PCIe slot supporting half-size/full-size Wi-Fi or 4G modules.
USB	1 x USB 3.0 + 5 x USB 2.0 maximum. One optional internal USB 2.0 port is unavailable when 4G is enabled.
Serial Ports	2 x DB9 RS232 standard; COM1/COM2 support RS485 by jumper. Up to 4 serial ports are optional with hardware modification.
GPIO	4-channel GPIO input/output.
BIOS	64 Mb Flash ROM.
Watchdog	Hardware reset watchdog, 256 levels (0-255 seconds).
OS Support	Windows 7 / Windows 10 / Linux.
Power	12 V DC input.
Operating Temperature	-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 1.2; 1 x VGA by default. VGA is mutually exclusive with optional second HDMI 1.2.
USB	Rear: 1 x USB 3.0 + 1 x USB 2.0; front: 4 x USB 2.0.
LAN	2 x RJ45 Gigabit Ethernet.
Serial / Audio	2 x DB9 RS232; 1 x combined Line-out / microphone audio jack.
Controls / Power	1 x HDD LED; 1 x illuminated power button; 1 x Clear CMOS 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 header; optional and unavailable when 4G support is enabled.
Serial	4 x 2 x 5-pin COM headers defined; JCOM1/2 share signals with the front DB9 ports. Four-COM support requires hardware modification.
Power	1 x 4-pin DC power input connector; 1 x drive power connector.
Front Panel	1 x 2 x 5-pin front-panel switch and indicator header.
GPIO	1 x 2 x 5-pin GPIO header.

5. Display Support

NUC19D supports 1 x VGA and 1 x HDMI by default, or an optional dual-HDMI configuration. The VGA connector is mutually exclusive with the second HDMI 1.2 output. The source manual states support for synchronous or asynchronous dual-display operation through VGA and HDMI.

Item	Description
Integrated Graphics	Intel® HD Graphics.
HDMI	1 x HDMI 1.2 standard; optional second HDMI 1.2.
VGA	1 x VGA standard; mutually exclusive with the optional second HDMI.
Multi-display	Supports synchronous or asynchronous dual-display output through VGA and HDMI.

6. Serial Port Configuration

Port	Default / Optional Function
COM1	DB9 RS232 by default; supports RS485 through jumper configuration.
COM2	DB9 RS232 by default; supports RS485 through jumper configuration.
JCOM1 / JCOM2	Share signals with COM1 / COM2 and are mutually exclusive; not populated by default.
JCOM3 / JCOM4	Optional additional serial ports; supporting four serial ports 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	Fanless cooling design; CPU is mounted on the rear side.
Watchdog	Hardware reset watchdog, 256 levels (0-255 seconds).
Clear CMOS	Rear Clear CMOS push button plus 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	-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
NUC19D-N22-J1900 VER1.1A	Intel® Celeron® J1900; 4 cores; 1.99 GHz; DDR3L; HDMI + VGA; 2 LAN; 6 USB; 2 COM / 2 RS485; 12 V DC.
NUC19D-N22-N2840 VER1.1A	Intel® Celeron® N2840; 2 cores; 2.16 GHz; DDR3L; HDMI + VGA; 2 LAN; 6 USB; 2 COM / 2 RS485; 12 V DC.
Display Option	Optional dual-HDMI configuration; VGA and the second HDMI are mutually exclusive.
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.
- Ordering Information lists both J1900 and N2840 variants. The detailed processor section describes J1900 as the integrated reference configuration and states compatibility with Intel® Bay Trail-I/M/D processors.
- Serial and USB resources are configuration-dependent. Supporting four serial ports requires hardware modification, and the optional internal USB 2.0 interface is unavailable when the Mini PCIe slot is used for 4G.

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 NUC19D User Manual Issue 1.1A. Product specifications, interface counts and optional functions may vary by production configuration. Please confirm the selected configuration before order placement. All product names, trademarks and registered trademarks are the property of their respective owners.